THE
MEDICAL AND SURGICAL
REPORTER.

No. 2,004. AUGUST 3, 1895. Vol. LXXIII—No. 5

ORIGINAL ARTICLES.

CANCER OF THE BREAST: REMARKS ON PATHOLOGY AND TREATMENT.*

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The general subject of carcinoma is too large a one for me to attempt to cover in an article such as this. I believe I am correct in saying that our knowledge of this affection is more chaotic than of any other medical subject of equal importance. Because of this fact, it is perfectly permissible for each physician to hold and advocate doctrines which are at variance with those expressed by various authors.

Supposed causes of this affection are many, but the etiology is involved in such profound doubt that a consideration of them would be a fruitless task. Heredity, grief, trauma, bacteria, protozoa and other supposed causes have not received cordial recognition and cannot, in the present state of our knowledge, be regarded as potential factors in the etiology of the affection.

Since the etiology is so obscure, I have deemed it best to confine my remarks to some deductions drawn from clinical and pathological experience.

Cellular elements and a stroma or fibrous network constitute the histological elements of cancer. The blood and lymphatic system, while necessary, do not form an integral part of the growth.

The cellular elements vary in size, number and arrangement. No particular cell is characteristic of cancer. The cancer cell is a myth and has been relegated to oblivion. The stroma is a very unstable quantity; in some cases being small in amount, in others constituting the bulk of the tumor.

It seems to me that the relative proportions of cells and stroma is a practical point of much importance to us, both clinically and pathologically; for from this variation we are enabled to formulate the following propositions:—1, The malignancy of a new growth is in inverse ratio to the amount of stroma present. 2, The malignancy of a new growth is in direct ratio to the amount of its cellular elements.

From these two facts, and they are facts, it seems to me that some deductions of an intensely practical nature can be drawn. Preponderance of cells means malignancy well marked; excess of stroma means malignancy reduced.

Modern thought seems to have accepted primarily the local origin of malignant growths; hence, we need spend no time in discussing their local or general origin.

At this point I desire to depart from the generally accepted belief and say that

*Read before the Ohio State Medical Association, 1895.

I shall attempt to prove from clinical and pathological data, that the only essential feature of a malignant growth is the cell elements; malignant growths are essentially cellular structures.

This view receives confirmation from facts which have been noted by various observers. After removal of a breast, clumps or nests of cells have been found beyond the apparent confines of the tumor; no stroma or network is present, yet we know from sad experience that these cells have the power to produce a typical malignant tumor. Under such circumstances we must certainly confess that the quintessence of the disease existed in these cells, and, in fact, so far as our observations can go, the cells were all that was essential to produce the tumor.

Because of facts similar to the above, and because of the greater malignancy of those tumors which are rich in cellular elements, it seems a perfectly justifiable conclusion to regard the stroma as of secondary importance and a secondary formation; it cannot, therefore, be regarded as an essential part of the growth. The stroma is probably produced by a condensation of the tissues, made necessary by the great increase of cellular elements in the part. The definition of carcinoma as ordinarily given is therefore incorrect, in that it describes the fibrous network as part and parcel of the cancer.

From the above condensed statement of facts we may go farther and claim that the fibrous tissue is conservative, being an attempt on the part of nature to limit and circumscribe the growth; it serves as a barrier against further infection. The fact that the more fibrous tissue there is in carcinoma, the less malignant it is; the fact that fibroid phthisis is the least malignant form of that disease, and the fact that in the few cases in which spontaneous cure of carcinoma has been observed (Billroth), it has been brought about by an over-production of fibrous tissue, leads me to regard the stroma as our ally and not as our enemy.

Warren in his "Surgical Pathology and Therapeutics," says: "These cells grow into the surrounding connective tissue, which is thereby stimulated to increased development." This expresses about the same idea I have tried to elucidate above.

It will be observed from what has been said that this function of fibrous tissue is general and not a specific function applicable alone to the subject of carcinoma. The conservative nature of this element is just as plainly indicated in tuberculosis, syphilis and other pathological conditions which are essentially cellular in their nature.

From these facts, if they be facts—and I am much impressed with their truth, we can, I think, draw some highly important deductions as to treatment. In the first place they show us that the knife should be used only in those cases which permit of an excision sufficiently extensive to remove all vestige of the disease. For should we fail to accomplish this, we simply break down nature's barriers and invite a recurrence of the disease which will be more virulent. As a matter of fact, this is just what does occur, for you may find in any textbook upon surgery the statement that recurrences after removal are prone to be malignant, more rapid in their growth, more cellular in nature and more rapidly fatal than was the original growth. The history of operations for removal of cancer of the breast presents an increasing tendency to go further and further around the malignant growths. A few years ago, excision of the carcinomatous mass from the breast was considered to be all that was necessary in this class of cases. We next find it recommended that in all cases of malignant tumor in this locality the entire breast be removed. The next step was that in all cases it was necessary to clean out the contents of the axilla, even though no evidence of disease in that locality was obtainable by the sense of touch. Dr. Halstead, of John Hopkins Hospital, recommends the removal of the breast, the infra-clavicular and axillary contents and the pectoralis major muscle, in all cases where there is a malignant tumor in any part of the breast. He recommends that these structures shall all be removed in one piece, and gives as the reason therefore that it is not advisable to cut through cancerous tissue lest your wound become infected from the material left. Dr. Willy Meyer goes one step further and recommends that in all cases the pectoralis minor muscle be taken out in addition to the structures recommended above by Dr. Halstead.

This simple enumeration of the changes

in technique of the operation shows conclusively that the statistics up to the publication of Halstead's paper, have not been satisfactory and that the apparent hope must come from wider incisions and the removal of greater quantities of tissue in malignant tumors which are far advanced and in which there is great involvement of tissue. It seems to me that in view of the facts adduced above, the late operation hastens the death of the patient by increasing the malignancy of the disease. In view of the terrible disease from which these patients suffer this may be a humane act, but it is in direct conflict with the ordinary tenets of our profession. The ordinary reasons given in textbooks for operation in this class of cases are, that the patient's life is prolonged and that she is relieved of suffering, also of the mental torture of having to carry around with her a foul, malodorous ulcer. Perhaps these reasons are valid, and perhaps they are not all of them strictly true. I doubt very much whether the life of the patient is ever prolonged by the operation in these advanced cases of carcinoma. It is a question to my mind as to whether the greater malignancy of a recurrence does not materially shorten the life of the individual. This, of course, is a point very difficult to determine. I have operated in a considerable number of such cases within a comparatively short time, and with one exception all of such cases have died within fourteen months after the operation. The one exceptional case was a woman in whom the anterior and lateral thoracic walls were infiltrated with a large number of small nodules about the size of buck shot. Although this woman is still living, there have been four local recurrences since the operation, which was made in March, 1894, and at the present time she has a fifth recurrence in the supra-clavicular region. Since my personal experience has been so unsatisfactory in this class of cases, I hesitate about advising operation in cases so far advanced.

In conclusion I desire to call attention to a clinicial fact which has apparently escaped observation, and that is, the possible utility of the fibrous constitutents of the malignant growth. If the previous statements about the nature of this tissue are correct, it seems to me that some highly interesting and important deductions can be drawn. My idea of this therapeutic application would be about as follows: You will all call to mind at once that tissue of this sort possesses the property of contracting, (and the retraction of the nipple in scirrhus is a well known illustration), and that this contraction causes ischæmia; ischæmia means altered or diminished nutrition of the parts: were this carried far enough, degeneration and innocuousness would be the result. The conclusion, therefore, to this study is that the hope for cure of these malignant growths may be looked for in the fibrous tissue. Were we able to produce this fibrous tissue or to cause an overgrowth of it, we certainly could logically expect the destruction of the malignant growth.

We find in pathological anatomy elsewhere, an example which will about meet my ideas on this subject. As is well known, in cirrhosis of the liver we have the production of new connective tissue between and around the lobules of the liver. The subsequent contraction of this newly formed connective tissue results in altered nutrition and destruction of function of the cellular elements. Now, if this process were applied to pathological formations such as carcinoma, we have practically the same conditions to deal with. We have epithelial masses more or less completely surrounded by a fibrous network, and were it possible to produce an irritation sufficient to cause an increased growth of this fibrous tissue, we could then utilize its property of contraction for the purpose of destroying pathological cellular tissue; or, in other words, we might utilize Nature's method in a pathological condition for the purpose of overcoming the growth of these tumors.

Now, I think we will all admit that internal medicine will not produce the result aimed at. On the contrary, it seems possible that the result may be produced by the introduction into the substance of the tumor of an irritant sufficient to bring about the desired end. Methyl-blue used in this manner has been recommended, but the results have not been brilliant. Alcohol injected into carcinoma of the uterus has, according to Schultz, of Budapesth, caused the arrest and disappearance of ten of these tumors, and epithelium developed over the eroded surfaces. Robinson, concludes that by judicious cauterization with chloride of zinc and potassa a great many

of what would be deemed incurable cases, can be brought to a permanent healing. From these latter facts you will observe that the modern tendency is to the employment of agents which have the effect of increasing and actually causing the formation of new connective tissue in and through the growth. This, I am convinced, is along the right track, and I hope that its perfection will lead to the radical cure of a class of cases which has long been the opprobrium of the medical profession.

A curious co-incidence is found in the fact that alcohol is generally regarded as the causative factor in cirrhosis of the liver, and Schultz found that alcohol injected into carcinomata of the uterus caused the arrest and disappearance of these growths.

THE RECOGNITION OF INCIPIENT INSANITY.*

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To the practitioner in general medicine no feature of the study of mind disorder is more attractive or more intensely practical than that which pertains to its early recognition. The law of its development, the phenomena of its evolvement, and the pursuit into the fastnesses of its hidden origin are subjects of entrancing interest to him. It is right that this is so. It is as it should be. The physician in general practice may not consider that a comprehensive study of the subject of insanity as a whole is within his province. He may reasonably consider the field too extensive for his time and too intricate for his means of investigation, but he above all others of his brethren of the healing art, is the conservator of the public health; he it is who must know the dangers lurking in the shadows and point out the sources and the manner of development of disease and disorder. In an especial manner he is the custodian of the public health, the conservator of the public weal "*in menti, in corpore.*"

The problem thus important is not always as easy of solution as would at first thought appear. To the unthinking the symptoms of insanity are always self-evident. In fact, even judicial authority will sometimes maintain that untrained and lay evidence is as valuable as any other in determining these phenomena; and following in the wake of such opinions much unjust criticism is engendered. The truth is that there is no field of medical investigation in which more accurate scientific investigation is required than in the region of the development of mental disorders. It is important that the manner of this development should be carefully studied and the characteristics of the first evidences should be most minutely examined. The importance arises from the gradual evolution of the phenomena and from the very unfavorable conditions that result when these conditions become fully established. Prophylaxis becomes more important than cure, and he who counteracts recognized tendencies and incipient disorder, is more essentially a savior than he who redeems from the fully developed disease.

The complexity of mind phenomena greatly enlarges the scope of this investigation. It is more comprehensive than the examination into the disordered function of any other organ because mind activities are so much more extensive in the field of their operations. After all, however, the same laws are seen to be operating here as elsewhere. The solution of the problem of the origin of mind disorder becomes simply one of the study of the relations of supply and demand in the economy of the organism. In the evolution of mind activity energy is expended that is represented in the waste of physical elements. To produce regular, well-balanced and methodical action, the brain must be supplied with a requisite amount of proper nutrient pabulum in proper re-

*Read before the Ohio State Medical Association, 1895.

lation to the energy expended. Disordered action here almost uniformly indicates a disturbance in the healthy balance between this supply and the demand upon it. Speaking broadly, the study of incipient mind disorder becomes a study of brain nutrition.

Three elements determine the extent and character of these disturbances in any given case. There is first the type of structure of the cell elements of the particular brain. This varies greatly in different cases. The variation is largely, in fact we may safely assume almost entirely, in the varying capacity of the cells to assimilate and appropriate nutrient material. The extent of their fibrillary ramifications and the consequent extent of their functional capacity must be determined by this. Their function as trophic centers is one of their most important functions, and upon the varying extent to which they are capable of performing this function depends their varying degree of stability and of regulated energizing. The nervous type is that which readily shows exhaustion, has comparatively limited power to recuperate and whose energy is fitful and irregular in its exhibition. The type of largest power and firmest stability is that which can longest endure continuous functional activity without signs of exhaustion, and shows the greatest ranges of energy with the least evidence of fatigue. In simple terms it is a question of nutrition.

The second element is the actual as well as the relative amount of energy demanded of the cells. The kind of demand that is most frequently injurious is the overstrain of worry. Simple intellectual or physical exercise of normal character, is not often so excessive as to be injurious. I know that this is against popular opinion, but it is in accord with my experience and I believe with that of most observers. There are exceptional cases in which simple overwork, kept up through too many hours, at the expense of sleep and rest and without sufficient recreation and variation, has resulted in serious organic disease without the addition of any form of dissipation or other excess. I have a case now in my care that is a marked illustration of this exceptional condition.

F. S., aged 32, well educated, bright, industrious and painstaking, was appointed superintendent of a blast furnace at 24 years of age. He gave very close attention to detail, and besides interested himself in other matters; became president of a glass manufactory; president of the Board of Education of the city in which he resided; one of a board of three to prepare plans and build water works; an officer in a Masonic Lodge and took an active part in all these enterprises. He was given to details, not trusting these to others, but putting in many hours a day, not taking any recreation or varying his activity by any amusement. He was of exemplary habits in every respect. Almost a year ago he began to show signs of mental impairment in the form of entries made daily in his diary which he had kept for many years. These became more a record of comparatively insignificant events in his daily life rather than of his business transactions as they had been before. His memory began to show signs of failure, his speech became slower and there was a depreciation in motor coördination. His gait was awkward and somewhat irregular. He was taken to Philadelphia, and was under Weir Mitchell for almost three months. The motor symptoms seemed to improve but the mind disorders increased. The dementia became marked and delusions of an indefinite character came on. He was eating and sleeping well, but the brain cells gradually deteriorated in functional capacity. Since he has been with us his course has continued steadily downward. There is now very little functional capacity left in the cells. He can scarcely respond to simple questions. The reaction time is very much retarded, yet his general nutrition is good. He eats and sleeps well and does not lose flesh. There seems to be a simple degenerative change in the cell elements from overstrain; too prolonged stimulation resulting in the loss of power to further assimilate nourishment.

Excessive fatigue, with its accompanying hyperæmia and vascular disorder, does induce such degenerative changes, as has been well demonstrated by experimentation, but it is not often in practice that we see uncomplicated cases of this character. There is usually the added effect of drain by some excess, as the over stimulation of alcohol or some drug.

From worry, which is much more frequent, there is the same excessive hyperæmia and waste that is found in simple overstrain, and the result is

the same. It is more rapid in its action, however, and more damaging in its effects. The result is rapidly induced fatigue, disordered function and a depreciation in the power of cell elements to recuperate. The physical effect is the rapid waste in the protoplasm of the brain cells, and especially a lowering in its vitality, rendering it less liable to renew its substance and less capable in energizing.

The third element to be considered is the variation in the quality and quantity of the nutrient pabulum supplied to the cells. A simple anæmia will of itself cause, in certain cases, symptoms of decided mental disorder.

Miss A. W., was referred to me for examination. She was anæmic in a marked degree. She was almost bloodless in appearance. She had suffered from menorrhagia for several years, and for the past few months the flow had been almost constant. Examination revealed an intramural fibroid about the size of an orange. A few months before, she had begun to show signs of mental disorder was extremely suspicious of her mother, brother and sister, with whom she had lived happily and to whom she was much attached; accused them of doing things to annoy her; heard voices at night and believed persons came into her room at night to attempt her injury. She finally became much excited over the fancied injustice of her mother, screamed out at the breakfast table and could be quieted only with difficulty. At times she was able to recognize that her ideas were delusions, and was sorry she had acted so. At other times they would return in all their intensity and she would not resist them. We advised removal of the tumor and the stoppage of the excessive flow of blood. This was done and at the same time the appendages, being found the seat of cystic degeneration, were removed. It was found necessary to remove the entire uterus. She recovered from the operation nicely, has steadily gained in strength, her color has much improved and she has not a single symptom of mental disorder since the operation. There was no hereditary influence, no worry nor other sufficient cause for the mental symptoms, and we felt justified in attributing them to the simple anæmia. The result demonstrated that we were correct.

But simple anæmia uncomplicated is not often the cause of the mind disease. It is usually complicated with the circulation of a poison in the nutrient fluid, such as alcohol, opium, the syphilitic ptomaines, the germs or their ptomaines of other specific or febrile diseases, the retention of poisonous waste products, or changes in the vascular arrangement that interferes with the proper supply of the nutrient fluid in the proper quantity. This may be through changes in the vessel walls, variations from the normal in blood pressure, or obstructions to the distribution of the blood and consequent impoverishment of the cell elements. In every case the first sign of this disturbance, this poverty, is the exhibition of painful and difficult action of the cells. If closely examined, every case of mental disease will be found to have a prodromal period of longer or shorter duration, of greater or less intensity in its symptoms, that is characterized by depression and difficulty in the exhibition of mental action. Mind activity becomes more distinctly an effort and there is a morbid depression that cannot be overcome. Sudden shock will produce such condition in a few moments, while in most cases the period extends over weeks and months. Without warning in the first case, we cannot avoid the result; in the second case we can do much to ward off what is otherwise inevitable and we should be prepared to interpret aright the signs we see. Whenever worry or routine work is causing fatigue and depression, whenever mental action becomes irksome and requires unusual effort, at once advise a change. Introduce recreation, change of scene, rest, more sleep, different exercise or more nutritious dietary. Above everything else remove, if possible, the cause of worry or try to modify its injurious effect. The incipient stage of mind disorder is the painful discharge of mental functions and increased sense of effort in intellectual operations. A typical case is that of the house-wife, over worked, worried by the care of children and often by the misconduct or neglect of husband, or by financial straits and misfortune to loved ones, a constant "gnawing at her vitals" in a much more than poetical sense, growing anæmic, a sense of burden and a depression with her constantly, until, sooner or later, with her type of cell structure the nutrition be-

comes permanently impaired and an outburst of melancholia or mania ensues.

Sometimes the changes are very gradual and so subordinated to the volition of the patient that they exist for months without detection, and friends are startled by some overt act of mental unsoundness coming apparently out of a condition of usual health. The suddenness here is nearly always apparent rather than actual. Close examination will disclose some form of excessive demand on the brain cells, or some unusual interference with their supply of nutritive material, running through preceding weeks and months.

Excess and dissipation cause many cases, by adding elements of interference with cell nutrition. Nervous exhaustion, tremor, excessive morning fatigue, emotional tendencies, instability in intellectual action are among the prominent incipient symptoms of these forms. It is scarcely necessary to point out the fact that all of the early signs of mind disorder from dissipation and excess are those of nutritive impairment. Your daily experience will demonstrate it, but it is well to keep this feature more prominently in view. In advice as to treatment it is most important. Removal from temptation or the opportunity of indulgence, rest to the cells, plenty of sleep, nutritious dietary, regulated physical exercise proportionate to the capacity of the individual, the prompt removal of waste products; all these are indications to restore the normal nutrition of the cell elements, and to remove the tendencies toward more permanent and pronounced disorder. It is not so important to be able to decide technically whether this symptom is evidence of a psychosis and that of a neurosis; whether this sign is that of insanity or only nervousness; not nearly so important as to know what things are evidences of incipient nutritive disturbance, to know what things are "indications" and what they indicate. The prodromata usually exist through a longer period than the friends believe. Beyond every other disease, insanity is of slow growth. The brain will withstand many abuses and much irregularity before giving way, and it is only frequent repetition of excessive indulgence, the constant erosion of the ever-recurring friction of care and worry that finally result in structural depreciation and disordered function.

In no other disease is it so difficult to correct the diseased tendencies. These frequently depend upon environments that a medical man cannot change. Advice often cannot be followed because of financial or domestic obligations and restraints, and oftener advice will not be followed because believed unnecessary. What is done must often be done against the wishes of the patient, and the utmost tact will be required to secure the adoption of the desirable changes.

Of all the prodromal symptoms of mind disorders, insomnia is the most constant and the most troublesome. It is the expression of morbid and extreme fatigue of the brain cells, their cry for nutriment and rest. It usually exists for weeks or months before the patient comes under observation. Its proper remedy is often extremely difficult to find. It is easy to give a narcotic, and the apparent rest to brain that it gives is fascinating but not safe. You will often be compelled to administer narcotics as the lesser of two evils, but remember you are never thereby producing a natural sleep or a normal rest to the brain. It is a stupefaction produced usually by the direct effect of the drug on the protoplasm of the cell, and simply places function in abeyance rather than gives opportunity for recuperation. Before resorting to them, therefore, exhaust every other natural means of inducing brain rest. Try the effect of heat or cold, of baths, of exercise, of stimulants and nutriment, of counter-irritation; the regulation of the excretions by the bowels, the kidneys and the skin; the use of such drugs as tend to promote nutritive repair and the reduction of waste. Reserve pure narcotics to the last and use them only when nothing else will reduce waste from over action, bearing in mind all the time they are in use, that so far from promoting nutrition they usually have the opposite tendency, while the indications are to increase the assimilation of nutriment by the brain cells, control and regulate their functional activity and remove the products of their waste.

Disordered function may find expression in emotional depression or exaltation, in morbid fear and undue timidity, or in over confidence, rapid ideation and quickened muscular action. It may slowly and insidiously develop as systematized de-

lusions of suspicion and persecution, or find expression in frequent and irregular emotional storms. The roots of the disorder may be in defective development, or may arise from the direct effect of overstrain and excessive fatigue. Yet in every instance the difficulty is the result of nutritive impairment, and the problem is how best to restore the proper balance between waste and repair, between supply and demand, the proper regulation of the burden to the strength of the bearer thereof.

COMMUNICATIONS.

FRACTURES OF THE SKULL.*

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I desire to call the attention of the Academy of Surgery to some points in regard to fractures of the skull which I believe do not receive in this country, or anywhere except in Germany and Russia, the attention which they deserve. I mean the mechanism of indirect fractures. This has much more than a purely scientific interest; it may be an important factor in our application of the art of surgery as well. It is now eight years since I read before the College of Physicians (*Trans. Coll. of Phys. of Philadelphia*, 1886) a paper, to the preparation of which I had devoted a great deal of time and labor, and in which was expounded the theory known as the "bursting" theory of indirect fractures. This paper has—so far as I know—never been noticed in any way on this side of the Atlantic. I refer to it because I would like to make it the authority for certain statements which I make here and which are there supported by argument and demonstrations.

The "bursting" theory of indirect fractures of the skull may be invoked to clear up many difficulties of diagnosis in fractures of the skull, and I believe that it should invariably be invoked before conclusions of a medico-legal character are reached.

I have seen more than one case, under the care of the Coroner of Philadelphia, in which I found a fracture precisely where I thought it should be, even after the coroner's physician had examined the skull and concluded that there was no fracture at all. I have also seen cases in the living in which the application of the "bursting" theory has furnished very instructive suggestions in regard to the diagnosis of accidents to the skull, making them much clearer and the treatment much more satisfactory. An appreciation of the bursting theory also often clears up the perplexities of cases in which, without detectable fracture of the skull, there is found a rupture of blood-vessels and hemorrhage within the cavity of the skull, either extra-or intra-dural.

Briefly stated, the bursting theory may be outlined as follows: The skull is a hollow case, of a somewhat ellipsoid form, the wall of which is formed of bone, varying in thickness and density in different parts, and of a peculiar conformation, and with peculiar contents and coverings. When such a case is struck, or when it strikes upon a resisting body, it is compressed in a direction in the line of the force and counter-pressure (which latter may wholly depend on *vis inertiæ*). The result of this compression is to shorten the prime diameter, and of necessity to lengthen the transverse diameters. As illustrating this first phase of action, Sir Charles Bell, in the early part of this century, made an experiment (which is easy to repeat) in which he placed movable balls inside and outside of a hoop and touching it, and found that a blow upon any part of the hoop caused the ball immediately under it and that immediately opposite it to move toward the centre of

the hoop, while those distant ninety degrees from it moved away from the hoop. If this experiment were to be modified so as to meet the conditions of a hollow sphere instead of a circle, we might place half a hollow sphere upon a resisting surface, and striking it on the upper pole would find that this pole would approach the resisting surface and the circumferences would be elongated and describe a larger circle. In such an experiment, made upon an elastic substance, the compression and elongation would be followed by a corresponding expansion and shortening. The first compression and elongation spoken of are of the chief importance in indirect fractures of the skull, and in them we have (to use a simple illustration) conditions similar to those when an umbrella is raised. In the latter case it is plainly seen what takes place, namely, that, as the pole is brought nearer to the equator, this is elongated and the space between the meridans (the ribs of the umbrella) is increased. This increase being expected and provided for by material which lies in folds between the meridians, this is simply spread out. In a body with no such provision, however, any force that would bring its poles near together, and consequently lengthen its equatorial circumference and separate its meridians, would at once set up a struggle between the force applied and the cohesion of the particles lying along and between the meridans. If the power of cohesion were sufficient, there would be no disruption; if, however, it were not, then there would be a split beginning at some point near the equator, where the strain is most severe, and passing in opposite directions toward the poles. This is what would take place in a perfectly symmetrical homogeneous elastic body. What naturally takes place in the skull is shown by observation and experiment to be thus modified by the peculiar structure, formation, contents, and surroundings of the skull.

This is what is known as the "bursting theory," and its bearing upon practice will be appreciated, I think, by those who apply it. It provides the surgeon—not with certainty of diagnosis, but with suggestions of probability, which will increase his chances of making a reliable diagnosis. The inferences from it, which are of a practical nature, are as follows: Force applied to the skull, of sufficient violence and rapidity of action, will produce what is known as a direct fracture—a fracture at a point where the violence was applied. In these cases the rapidity of action is a very important element, as it is a well-known fact in physics that time enables cohesion to resist a disruptive violence, which, if instantaneously applied, would at once overcome the co-hesion. Force less sudden and less extreme applied to the skull will bring actively into play the elastic properties of the skull, and if violent enough will lead to a fissure at some distance from the point at which the violence was applied, and usually in a line meridonial to the point where the force was applied. My study of a large number of accidental and experimental fissures indicates that blows upon the forehead directly in the middle line are likely to produce a fissure of the skull, passing from front to back in or near the middle line, and more frequently at the base of the skull than in the vault. Blows applied to the forehead on one side or the other are likely to produce fissures in a line with the direction of the force, and crossing the skull to the other side. Such fissures occur almost always in the base, and they usually terminate in the middle cerebral fossa, though they sometimes cross the foraman magnum and traverse the cerebellar and posterior cerebral fossæ. Force applied to the middle of the occiput usually produces a fissure, passing in the direction of the force around the occiput, laterally or perpendicularly, sometimes separating the lamboid suture, sometimes splitting the lower part of the occipitial bone and going into the foramen magnum, and sometimes crossing the petrous bone, breaking it tranversely and passing into the foramen lacerum medius. Such fissures may pass straight down to the foramen magnum and (crossing over) split the body of the sphenoid bone and extend into the ethmoid or frontal bone. (Such fissures furnish typical illustrations of the correctness of the bursting theory.) Force applied to the side of the head, in almost all cases, produces a fissure passing through the base of the skull in the middle cerebral fossa. Such a fissure sometimes traverses this fossa completely and may pass completely through the base and vault, dividing the skull into two halves.

In some cases the fissure passes directly through the coronal suture; in many cases it splits the petrous bone longitudinally. In some cases force applied to the side of the head causes a splitting off of the posterior clinoid processes—an occurrence that is explicable only upon the supposition that the tentorium cerebelli, which is attached here and to the occipital bone, is put upon the stretch when the skull is elongated antero-posterially and drags these portions from the body of the sphenoid. Force applied to the side of the head frequently produces fissures passing around the side of the head, through the parietal and squamous bones, and often passing to the basi-sphenoid, but rarely dividing it completely. In some cases force applied directly to the vertex produces a fissure in the long axis of the skull. Such a fissure may be of a very great extent and may even divide a skull into two symmetrical halves. Longitudinal (antero-posterior) fissures occur more frequently in the base of the skull than in the vault.

An interesting form of violence, applied to the skull, is that due to falls upon the feet, where the momentum of the body is suddenly arrested by the resistance of the earth. In such a case a ring of bone surrounding the condyles may be driven into the skull, or—as observation and experiment show—the process of the sphenoid bearing the posterior clinoid processes may be broken off by the pull of the tentorium cerebelli, when momentum and resistance lessen the diameter from condyles to vertex and lengthen the diameter from occiput to sinciput.

I state my views in reference to this matter somewhat authoritatively, because I have studied it pretty thoroughly for ten years, and because these views agree, I think, with those of the most careful students of the subject in recent years. They have also been confirmed by a considerable number of personal observations. They have an important bearing upon surgical practice and also upon medico-legal questions. For example, in 1886 I saw a coroner's case of a person who had fallen down some stairs, striking the head near the external occipital protuberance, in which, after the skull had been opened and the brain removed, no fracture was found by the coroner's physician, and none would have been found had he not been asked to remove the dura and to look along a line suggested by an application of the bursting theory, where a fissure was found passing down through the occipital bone and into the jugular foramen.

My investigations show in over 90 per cent. of all cases fissures that correspond to what might be expected from an application of the principles of the "bursting theory." This result seems to establish the theory by the best test that we can apply to it; so that it appears to rest upon a very firm tripod of reasoning, experiment, and clinical observation.

I do not overlook the fact that there are fractures that cannot be accounted for by it. There are some fractures in which the force applied is so great and acts in such a manner that the skull is crushed so as to hide any evidence of the play of its elastic properties, the fracture being of a comminuted sort; and there are others in which one segment of the skull seems to be shoved over the other by forces of pressure and counter-pressure which require some study before their mode of operation can be understood. For this reason it is of importance to learn in every case the position which the skull has held in relation to the spinal column or to any body capable of exerting counter-pressure. No less is it important not to overlook the counter-pressure that is caused by the simple *vis inertiæ* of the skull and its contents.

But it would be impossible to speak of all the influences that may modify the strict application of any one theory in regard to fractures of the skull; and I must close with the expression of my own conviction that the supreme law governing the production of indirect fractures is that which depends upon the fact that the skull is practically a hollow elastic case approximately oval in shape, and which may be briefly formulated as follows: When a sufficient force is applied to any curvilinear parts of the skull, if the parts do not give way immediately, the axis of the skull lying in the same line as that of the applied force is shortened, and all the axes lying in planes at right angles to this line are correspondingly lengthened, with a proportional lengthening of their circumferences and separation of their meridians, so that the direct depressing force is converted into an indirect disruptive force acting at right angles to the

direction of the former. The effect is to produce a fissure or fissures, which will have a general meridonal direction.

The application of this law is subject to certain modifications due to the anatomical and architectonic peculiarities of the skull, its coverings and contents, and to certain exceptions due to the amount and velocity of the force applied, as well as to the coming into play of peculiar counter-forces.

DANGERS OF THE UTERINE TAMPON*

WILLIS E. FORD, M.D., UTICA, N. Y.

The advent of a new method of treatment which promises to speedily accomplish results that have heretofore been obtained slowly, if at all, naturally is accepted with enthusiasm. If we add to this the statement that the new method is devoid of danger, the chances are that it will be tried by a great number of physicians, and that the cases will not always be carefully selected. It is some time since the vigorous curetting and packing with gauze of a diseased uterus has been pretty generally practiced, and enough cases are before us to make a general survey of this method of treatment profitable. That it is a quick and brilliant mode of reaching results in certain cases, is on all hands agreed; but that it is beneficent in all cases, as it is now being applied, is very doubtful. It is so easy, however, to adversely criticise almost any legitimate surgical procedure, that at the outset I desire to disclaim any intention of detracting from its real merits, and only aim to point out some dangers that my experience has thrust upon me.

The dull curette has for years been successfully used where there were villosities or polypoid masses or retained fragments of placenta to be removed, and if the operators had gone a little further, and had insisted on the dilatation of narrowed cervices and subsequent attention to the proper drainage of the uterus, there would not have been the necessity for so radical a change in methods as has lately been seen.

The sharp curette, or spoon, has for a long time been necessary for the removal of sloughing cancerous masses, or for fibroid nodules, but not until quite recently has it been advocated for endometritis. Topical applications, which have in the main, and justly, been discarded, never accomplished what in favorable cases the curette and the tampon is seen every day to accomplish. The danger of adopting any really valuable treatment as a cure-all is, however, apparent, and the danger in certain cases of the curette and uterine tampon ought not to be overlooked. Endometritis is such a stubborn disorder that vigorous measures, amounting to a surgical operation, are justifiable; but there are certain conditions that preclude mechanical violence, even in the name of surgery. Such are the cases of fixed malpositions, due to adhesions from inflammatory exudates about the adnexa; and such, also, it seems to me, are all those cases of catarrhal salpingitis accompanying endometritis. Those who first advocated the sharp curette after thorough dilatation of the entire cervical canal, and of the body of the uterus when necessary, did not advocate the tampon of gauze: and several men who are entitled to speak authoritatively on such matters, notably, W. Gill Wylie, in this state, preferred others means to secure drainage—either a hard rubber instrument or open wire stem, or they left the dilated uterus to drain itself. Some critics, notably the Prices, of Philadelphia, did not approve the violent dilatation necessary, nor the device for drainage. The assertion was made that the theory was wrong, and that the injury to the uterine mucosa was found to set up salpingitis in a considerable number of cases, and that the last end of these patients was worse than the first.

*Read before Central New York Medical Association.

It now seems to me that these differences of opinion were due to the fact that cases of perimetritis were accepted without previous treatment to release adhesions, and chiefly, perhaps, to the manner in which the gauze tampon was made.

On the whole, however, the results have been so good that now not only gynecologists, but general practitioners, at least in Central New York, are practising rapid dilatation, curettement more or less vigorous, and tamponing with gauze more or less firmly, in a large number of cases. I am aware, however, that some deaths have followed this procedure, and that many cases of salpingitis are found whose history would seem to point to the operation as a cause. Last year I repaired a perineum for a woman living in a distant part of the state, and knew from her history and from careful examination that she had no tubal disease. Some six months afterward, her physician wrote me that she had just consulted him for great pain following a tamponment of the uterus for some catarrhal trouble, and he found in the left broad ligament a tumor larger than a hen's egg, very sensitive but entirely movable. While manipulating it, the sac ruptured. He was much alarmed and put the woman in bed, and after a short and not serious illness, she recovered sufficiently to be sent again to St. Lukes Hospital. I found a thickened tube and the uterus retracted and moderately fixed to the left.

Another case, not so fortunate in its outcome, followed dilatation and tight tamponing of the uterus for dysmenorrhea. She was about twenty years old and unmarried. Her physician, an excellent general practitioner, said he was careful as to sepsis, but that twenty-four hours afterwards she had a chill and rise of temperature. Soon after the gauze was removed, salpingitis followed, and two months later, when I saw her, she had on the right side an encysted pyosalpinx, holding more than a pint of pus, and was so feeble from sepsis that her friends declined to have any operation done. Such cases, I presume, are familiar to most of you who practice gynecology, and I need not take your time to relate more specific instances of what I believe to be due to the accident of too tight tamponing, especially of the cervical canal.

Many of my cases have been in the practice of such excellent surgeons, I cannot think the accident due to want of attention to antiseptic precautions, and while divulsion of a cervix or the most gentle scraping of an endometrium may occasionally be followed by considerable disturbance, the result is not generally an encysted salpingitis. Therefore, I do not think the accident the result of the dilatation nor of infection at the time of the operation, but a careful examination of the histories of more than a dozen such cases points to the tampon as the cause of tubal disease.

The original idea that gauze was necessary to keep the neck of the uterus open after thorough dilatation, as well as to drain the uterus, was manifestly based upon two errors. First, the uterine canal does not close down and prevent drainage after such operation; and secondly, iodoform gauze is not a drainage-tube, and does not remove the pus that may ooze into it. The statement that the gauze tightly packed in the cavity of the uterus after curettement causes a kind of involution, or that it improves the circulation of the parts, is not affirmatively proved by the cases I have seen, while often the immediate effect of dilatation, curettement with a dull instrument and thorough swabbing with carbolic acid or chloride of zinc, is followed by loss of bulk, reduction of tumefaction and, it seems to me, the consequent improvement of circulation without tamponing. Of course it is understood that as perfect drainage of the uterus as it is possible to secure is aimed at always. If more attention was given to maintaining a proper position of the organ after curettement, and less reliance placed upon gauze or any other device to secure drainage, better results would be obtained and fewer accidents occur. All must have observed after curettement and packing that when the gauze is removed, the last layers contain some detritus and often pus, which has not been drained, but retained. Iodoform gauze is not an antiseptic, and within the uterus allows only the bloody serum to escape, and retards putrefactive changes, but does not remove or sterilize pus that comes down from a diseased tube. In purulent endometritis, therefore, with the organ movable and in normal position, the gauze tampon is not necessary. If the uterus is fixed even slightly, it is dangerous because of the

probability of catarrhal salpingitis being present, and the danger increases in proportion to the firmness of the tampon. If the uterus is fixed in a malposition, means ought first to be employed to release the adhesions and to restore the organ to as nearly a normal position as possible before curettement, and no gauze, or but a very light tampon of it, ought then to be applied.

Among the agents to be employed to release adhesions, and to thus pave the way for proper drainage, I would place galvanism at the head of the list, and for those who do not use this, the hot vaginal douche, vaginal tampons of boro-glycerid, iodine, etc. The first serious accident from curettement and packing I ever saw was in a case with adhesions, and the woman was very ill three months, and got up with double salpingitis.

In cases of hemorrhagic endometritis without polypoid growths or villosities, the good results attributed to the sharp curette and packing are more frequently due to the thorough dilatation, and to the topical application of a strong antiseptic, than to any other thing. I have often failed to cure these cases with the curette and tampon, and have obtained better results from thorough dilatation and topical applications, especially in young women.

The tight tampon of iodoform gauze is necessary often to stop hemorrhage, but in this case I remove it in thirty-six hours.

I have several times succeeded in draining through the uterus an encysted salpingitis, where the uterus and tumor were movable, by full dilatation and very tight tamponing. In these cases, the tube was not folded on itself and displaced, but was spindle shaped and in nearly the normal position. There the tight tampon seems to me to be called for, but this interesting subject is not within the proper limits of this paper.

HYDROTHERAPY IN APPENDICITIS.*

GEORGE E. CLARK, M.D., SKANEATELES, N. Y.

Hydrotherapy in the treatment of appendicitis is by no means new, but I feel sure the subject has not yet received due attention.

From the opinions expressed by more than twenty physicians writing upon this subject in our journals, and from a perusal of the articles upon appendicitis in five recent text-books of medicine, I gather that the use of water is sometimes ignored, sometimes condemned and never mentioned favorably, except in the most casual way, when it is advised for the purpose of moving the bowels.

This, I maintain, is *not* doing it justice!

I shall endeavor to show you, by a report of seven consecutive cases treated and cured by the use of water alone, that there is more in hydrotherapy than the simple moving of the bowels. Osler, of Baltimore, says: "Briefly stated, localized pain in the right iliac fossa, with or without induration or tumor, the existence of McBurney's tender point, fever, furred tongue, vomiting, constipation or diarrhœa, indicate appendicitis."

All of my cases had localized pain in the right iliac fossa, induration or tumor, McBurney's tender point, fever and furred tongue. Some had vomiting, all had diarrhœa or constipation, or diarrhœa followed by constipation.

The treatment in each case was as follows: Cloths, about four inches square, wet in cold water, were applied to the right iliac region and changed, if necessary every three to five minutes, until the pain was completely relieved. Cold, *not warm*, water enemata were given every one to three hours, night and day, according to the severity of the case, and continued until the cure was complete. In some cases an initial dose of phenacetine was given where the temperature was high, but beyond this no medicinal treatment whatever was adopted. The patients

*Read before the Central N. Y. Medical Association.

were all put upon a liquid diet until convalescent. The following is a brief synopsis of the cases:

Case I.—F. B., farmer, aged 46. The attack followed severe effort in lifting accompanied with a blow from the handle of a plow. About twelve hours later he became conscious of pain in the right iliac fossa, which soon became severe and was accompanied with excessive tenderness; so much so that he could not straighten up. When seen by me the next day, he was in bed, lying on his back with the thigh flexed, complaining of pain on the slightes motion. Temperature was 100½° F., and the pulse not much elevated. Examination revealed an indurated area in the right iliac fossa, the McBurney point very tender, the abdomen neither distended nor tender, except in the region of the appendix; here, however, the least pressure caused great pain. The bowels were constipated, but there had been no vomiting.

Cold water externally and cold water enemata, at first every four hours and later three times daily, brought the temperature to normal in forty-eight hours. The induration and tenderness persisted for several days, but grew constantly less. For some time after, the man noticed a tearing sensation whenever an extra strain was put upon the muscles in that region, but there has been no second attack. I paid my first visit to this patient on the 15th day of the month, and my last on the 21st day—six days' treatment in all.

Case II.—Mrs. H., aged 23, June 24th, was seized with acute pain in right iliac region, seeming to shoot down toward the bladder. The temperature was normal, there was no tumor or induration, and very little tenderness on pressure. I made a diagnosis of renal colic and relieved the pain promptly by a hypodermic injection of morphia. I was called again the same day and was again obliged to resort to the hypodermic needle. On calling the next day I found the patient not yet well, but so much better that I did not visit her on the following day. June 27th, the fourth day from my first visit, I was called once more. I found the patient suffering great pain in the right iliac region. There was a decided induration and excessive tenderness, McBurney's point being well marked. The temperature was 103°F., tongue furred and the bowels constipated. I began the cold water external applications at once, but she had no enemata until her mother arrived in the evening, after which time they were given every three hours. About forty-eight hours later the temperature was normal, the pain in the meantime having quite gone, and the induration had almost, if not entirely, disappeared. In this case a quantity of seeds came away with the enemata. I made my last visit July 2d, nine days after the symptoms which I diagnosed as renal colic, five days after the positive diagnosis of appendicitis.

Case III. Walter L., aged 14, on the afternoon of September 25th, began to have pain on the right side of the abdomen, which steadily increased until early next morning, by which time it had become excessive and was accompanied by vomiting and diarrhœa. At this time I was called. I found the boy lying with the right thigh flexed, holding the bed clothes away from his side with his hand. The tenderness was so great that the mere approach of the hand would make him flinch. The whole abdomen seemed tender, but this was probably owing to the disturbance pressure caused in the iliac region. All the classical signs of appendicitis were present; the temperature was 105° F. There was a delay of a few hours in getting assistance, and, in the meantime small doses of phenacetine were given to reduce the temperature. In this case the enemata were given at first every hour. In forty-eight hours from my first visit the temperature was normal, the tenderness almost gone and very little induration left. My last visit was made on the 28th, three days after my first call, and two days later the boy rode five miles over a very rough road without any pain or inconvenience.

Case IV. This was a second attack occurring to the boy just mentioned. On January 14th, about four months later you will observe, after an afternoon's skating, he was taken with a repetition of his previous symptoms. Profiting by former experience, his treatment was at once started and by the time I arrived, several hours later, he was somewhat relieved. His temperature was 102° F., the induration was slight, if present at all; there was considerable pain; he had vomited and his bowels were constipated. No medicine

was given. I made him three visits. He was well on the 16th, *i. e.*, in three days. I learn that he has since had one slight attack, but found it unnecessary to send for me.

Case V. Miss R., aged 18, was a case seen in consultation. She was taken ill September 24th with a chill, vomiting, diarrhœa, fever and pain in the abdomen. Her physician was called on the following day. Within a short time she developed a decided tumor in the right iliac region, accompanied with excessive tenderness, especially over McBurney's point. She was treated with turpentine, morphine, some powders for her nausea and gradually increasing doses of quinine until six grains every two hours were taken. The abdomen was poulticed and the tumor painted with iodine. This treatment was continued for eleven days, the temperature ranging from 102° to 103° during the whole of that time in spite of the large doses of quinine which were given. On October 6th I saw her in consultation, and as her physician was about to start for the World's Fair, she was left in my hands. At this time the temperature was 102½°, the tenderness was great and the tumor could be seen very plainly. It was from three to four inches long and perhaps one and one-half inches wide. No fluctuation could be felt, although on account of the tenderness, deep pressure was not made. A rectal examination was not made. I continued the treatment for the first twenty-four hours. At the end of that time the temperature was one degree higher, and there was in *no* respect a change for the better. I then stopped all the medicine and the poultices. I gave one dose of phenacetine—five grains. I ordered constant cold water applications to the tumor and cold water enemata every two or three hours. I met with some opposition from the family, but I overcame it. At my next visit, twenty-four hours later, that girl's temperature was normal and the tumor was fully half gone. In three days she got out of bed for a few minutes, and she had not a single bad symptom after that. I made her in all but seven visits. She has had no return of the trouble.

Case VI. Was also seen in consultation. W. H., carpenter, aged 25. March 6th, at 3.30 P. M., he was taken with pain in right iliac region, accompanied with vomiting and diarrhœa. His pain increased rapidly, and his physician was called at 7 P. M. The physician, from these symptoms and the presence of McBurney's point, made a diagnosis of appendicitis. The temperature was, at this time, about 102° F. He was given calomel as a laxative, phenacetine for his fever, and morphine for his pain. The abdomen was poulticed. The patient grew worse, and on March 9th I was called in consultation. At this time, the temperature, in spite of the phenacetine, was 102° F., and I learned that it had ranged from that to 103°. There was marked induration in the iliac region and great tenderness. I could detect no fluctuation. The poultices and the medicines were stopped, cold water applied externally and cold enemata given every hour. The temperature was reduced promptly and the pain and induration disappeared so quickly that, two days later, his physician reported that he was "kicking because he could not get out of bed." His physician made his last visit on March 15th, nine days after the inception of the disease and six days after the water treatment was begun. I have recently seen this patient, and learn that he had some pain, due to adhesions in the right iliac region, which persisted for a week or more after he began to go about; this gradually disappeared and he has since had no trouble whatsoever.

Case VII. Was seen after he had been treated for nearly a week by another physician. J. H., aged 19, laborer. Six days before my first visit he was taken ill with fever, accompanied by pain on the right side of the abdomen. The pain gradually increased and was soon accompanied with vomiting and diarrhœa. He was treated by a physician, but, as I saw only the patient, I can give no particulars of the treatment further than to say it was medicinal. The patient was not satisfied with his progress and I was called. I found him with a temperature of 103½° F. There was an indurated mass in the right iliac fossa, about the size of a small egg. The tenderness was marked but not excessive. For comfort, the thigh was kept flexed. The tongue was thickly coated and the bowels constipated. The cold water treatment brought his temperature to normal within three days, and his other symptoms had so far subsided by that time that I did not visit him again. He kept to the

house for nearly a week longer, because of pain on his making certain movements. After this he went to work on a farm. When I saw him, about two weeks ago, he stated that he had been perfectly well ever since.

In reviewing these cases, it is worthy of note that, taking into consideration the comparative severity of the symptoms and the time which had elapsed between the onset of the disease and the first application of the water, the success of the treatment seems to have been largely in proportion to the frequency of the enemata. For instance, in Case I., where the enemata were given only every four hours and, later, thrice daily, the cure was slow and there was pain from adhesions, lasting for some time after. In Case II., where the enemata were given steadily every three hours, although the symptoms were much more severe, and not at first recognized, the *cure* was more prompt. In Case III., perhaps the most acute of the seven, the enemata were given every hour and the cure was still more prompt. In general, the same reasoning applies to the other cases. In Cases V., VI. and VII., in each of which other treatment had previously been tried, the striking and almost immediate improvement consequent upon the change could not be attributed to anything but the use of the water.

These enemata were not given for the purpose of moving the bowels, although they incidentally had that effect. They were given with the belief that they had some intrinsic influence upon the course of the disease, the proof of this being their greater efficacy when given more frequently—more frequently than could possibly be needed in order to empty the large intestine. Cold reduces temperature not only by the local abstraction of heat, but also by influencing the circulation of the part. It is likely that some of the water finds its way round to the cecum, but I doubt if much good is effected in that way. The upper part of the rectum lies in the median line at the usual level of the apppendix, and they cannot be much more than two inches apart. Now, the application of cold water causes, at first, a contraction of the blood-vessels, which is soon followed by a dilatation, the dilatation being much more persistent than the contraction. Why may not this reactionary dilatation withdraw some blood from the region of the appendix and so lessen the inflammation there?

I am *not* a fanatic. I do *not* believe that cold water will cure *every* case of appendicitis. I *do* believe that surgical measures are *sometimes* necessary. I was rooted and grounded in the belief that as soon as the diagnosis could be made, the appendix should be removed. As to that, I have changed my mind. I now believe that *cold* water, used *early* and *freely* and *often*, in the manner indicated, should *first* be tried, and, if the symptoms do not improve within twenty-four hours, surgical measures should be considered.

Public Health Service.

Whatever then may be the merits of anti-toxine as a cure for diphtheria, there can be no mistake in the policy of public cleanliness and of constantly improved health administration. Our American cities come short of their European contemporaries in most points of municipal organization and service. Fortunately, in the matter of public health work we have less to be ashamed of than in almost any other particular. There have been some scandals in the Health Department of New York City, but there has been very much to commend. All that is needed to bring our American municipal health administration up to a point of scientific and practical efficiency equal to that of the very best managed foreign cities, is a reform of our municipal government in general respects. The work of health boards is necessarily hampered at many points by the existence of corruption, of spoils methods and of ignorance and inefficiency in other departments of city government.—*Review of Reviews.*

RECTAL feeding may be carried on by means of a mixture of two eggs, twenty grains of pepsin, ten grains of chloride of sodium, and six ounces of water. This mixture should be slightly warmed, thoroughly agitated, and then gently introduced into the bowels by means of a syringe. To facilitate the entrance of the fluid into the intestines it is well to put the patient in a position with the hips much elevated above the head, either the knee-chest position or with two or three pillows resting beneath the hips.—*Toledo Medical Compend.*

THE MEDICAL AND SURGICAL REPORTER

ISSUED EVERY SATURDAY

Address all communications to 109 and 111 Fifth Avenue, New York.

HAROLD H. KYNETT, A.M., M.D.
Editor.

RODERIC C. PENFIELD
Publisher.

Editorial Offices, 109 and 111 Fifth Avenue, New York.

Entered as second-class matter at Asbury Park, N. J.

TERMS:—Three Dollars a year in advance. Sent four months on trial for $1.00.

REMITTANCES should be made payable to the Publisher only, and should be made by Money Order or Registered Letter.

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SATURDAY, AUGUST 3, 1895.

EDITORIAL.

THE SERUM TREATMENT OF MALIGNANT GROWTHS.

If the divinity of medicine is to be incarnate in the microbe, so long as the profession prostrates itself before the shrine of bacteriology and hails the incoherent utterances of some laboratory devotees, frothing in convulsions, as oracles from the divinity delivered in answer to the urgent questions for which the god is importuned with copious libations and the immolation of common-sense, so long may we expect to find the ultimate cause of all disease believed to be inherent in some germ. It must be so, else science stultifies itself—and science, being truth (the single fact upon which all scientists agree, each having regard to his own modicum of knowledge) science may not err.

True it is that thus far science has failed to absolutely prove the causal relation of a micro-organism with any, even the infectious diseases. It undoubtedly has demonstrated a constant relationship, presumably causal, between certain infectious diseases and certain forms of microbic life, and by searching experimentation and careful observation has justified the conclusions reached as logical and best in harmony with the premises provided. It is one thing to tentatively admit this causal relationship in a few highly infectious diseases where research has palpably demonstrated the constant presence of one or another specific form of germ life, but it is quite another matter to conclude therefrom, that all diseases are due to specific organims, and it requires the active exercise of an unreasoning faith—the faith that is the substance of things hoped for, the evidence of things not seen—to accept the hypothesis despite the fact that none of the evidences of microbic influence can be found by any of the tests known in bacteriological laboratories.

The evolution of the anti-toxine treatment of diphtheria, tetanus, and the like, may be called a scientific process based upon logical principles. Not so, however, in the case of other pathological condi-

tions, and notably the malignant neoplasms. Here the serum treatment must be admitted as based upon empiricism purely.

It will be of interest to review the recent investigations of the treatment of malignant tumors by the injections of the toxins obtained from cultures of the bacillus of erysipelas.

About two years ago, Dr. Coley, of New York, presented a table of thirty-eight cases of malignant disease in which erysipelas cured either by accident or intent, and drew therefrom the following conclusions:

(1.) The curative effect of erysipelas upon malignant tumors is an established fact.

(2.) The action upon sarcoma is more powerful than upon carcinoma—in about the ratio of 3 to 1.

(3.) The treatment of inoperable malignant tumors by repeated inoculations of erysipelas is both practicable and not attended with great risk.

(4.) The curative action is systemic, and probably due chiefly to the toxic products of the streptococcus, which products may be isolated and used without producing erysipelas.

(5.) This method should not be employed indiscriminately until further experiments have proved its limitations.

A year since, Dr. Coley reported twenty-five cases of sarcoma and ten cases of carcinoma treated by what he terms the combined toxins obtained from pure cultures of the bacillus of erysipelas and the bacillus of prodigiosus. He finds that injections of toxins give as good results as those obtained by the infection of the micro-organism itself. His experience was that the treatment by this method was of very little use in gland carcinoma; beneficial to a slight extent in epithelioma; and of great benefit to sarcoma, especially when the growth is situated in soft tissues. Of the twenty-five cases of sarcoma six appeared to be cured; one case of sarcoma of the tonsil and neck which had twice recurred was cured and remained well three years afterwards. Of the remaining nineteen cases, nine showed marked improvement, eight slight improvement, and two no improvement whatever.

Again Dr. Coley relates (*Medical Record*, May 18th, 1895) his further researches into the use of erysipelas toxins and erysipelas serum. These confirm his first conclusions. He has improved his method of treatment by using the blood serum of a horse subjected to the action of erysipelas. He relates the following cases: (1) A patient with a rapidly recurring and inoperable carcinoma of the breast was treated for several weeks with the toxins: the growth of the tumor was checked, but there was no decrease in size. The serum was then injected for two weeks, but without any apparent effect. (2) A woman, aged 50, had an enormous inoperable carcinoma of the breast. The injections produced a diminution in the size of the tumor: later erysipelas toxins were substituted for the serum. In two months the growth was reduced one-half size. Then uncontrollable and fatal hemorrhage was produced by she erosion of a vessel. (3) In a case of probable carcinoma of the neck and sternum, the tumor ceased to grow and became less fixed and slightly smaller.

He observes that the doses have not been pushed to anything like the probable limit of safety. He is now using much larger doses in eight cases of carcinoma and sarcoma.

He relates three cases of epithelioma similarly treated. In one case, already published, of inoperable epithelioma of the chin, lower jaw and floor of the mouth he could find no evidence of the disease eight months after the injections had been discontinued. In the second case of recurrent epithelioma of the face the growth entirely disappeared. In a third case of inoperable epithelioma of the tongue the growth became smaller and less fixed.

Emmerich and Scholl (*Deut. Med. Woch.*,) relate their clinical experience of the treatment of carcinoma with erysipelas

serum. The inoculate sheep with erysipelas cultures and free the blood serum from micro-organisms by filtration. They have treated a number of cases of carcinoma and sarcoma with this serum during the past half year. In only two cases were there no results, and here there was secondary infection with suppurative changes in the carcinoma. Details are given of six mostly advanced and quite hopeless cases; four of these were examples of recurrent mammary carcinoma, another of rapidly-growing and inoperable mammary carcinoma, and a sixth of long-standing cancroid. 1, A recurrent mass was present in the scar as well as carcinomatous glands in the axilla, and the whole of the infra-scapular space was infiltrated with new growths. The masses in the scar and axilla disappeared under the treatment, and the improvement was such that the patient could move her arm. 2, The hard masses about the scar disappeared, but a larger mass did not become less before the treatment had to be suspended. 3, There was an ulcerating mammary carcinoma with metastases. Several of the masses became less, and the general condition of the patient greatly improved. 4, A metastasis in the upper arm disappeared in another case. 5, A large and rapidly-growing mass of carcinoma in the breast and axillary glands rapidly became less. The mass in the axilla diminished to half its original size in fourteen days. 6, Great diminution in size occurred in a cancroid in the face. The authors think that the action of the serum is specific; it is probably even more efficient in sarcoma than carcinoma. It cannot yet be decided whether it acts on all forms of carcinoma. The younger the carcinoma the better the results, but older carcinomata soften and become absorbed. The amount of the injection must depend on the size of the growth and the condition of the patient; 1 to 4 c.cm. of the serum injected daily into the growth suffices for small tumors; 10, 15, 20, or 25 c.cm. may be injected into a large tumor. No pain was noted with the smaller injections, and in no case was it necessary to give up the treatment on account of pain. There was usually no fever. The action on the general health was remarkable. A pseudo-erysipelas was sometimes noted, lasting from twenty-four to forty-eight hours. The serum should be used not only in inoperable and hopeless cases, but, injected before operation, it should complete the work of the surgeon, preventing recurrence.

Freymuth has employed the treatment in two cases. In one of these (epithelioma of the tongue) the patient was *in extremis* and the treatment did not avert death. The tumor itself, however, was greatly modified, appearing to undergo a kind of semi-fluid caseous transformation. In the second case (recurrent sarcoma of the upper jaw) the patient developed during the treatment a genuine erysipelas, which he communicated to his wife who was nursing him. He bore the attack well, however, and here also the effect of the serum treatment on the tumor was very remarkable. The illness of the wife shows that the serum is to be used with the greatest care.

P. Bruns having seen for himself the good effect which erysipelas has on certain cases of cancer was readily induced to try the method of Emmerich and Scholl. He injected the serum in six cases of malignant tumor, but his results were disappointing. He noticed no diminution in in the size of the growths; on the other hand the treatment caused considerable respiratory and circulatory disturbances. In all the cases there was a rise of temperature proportionate to the amount of serum injected, with systemic disturbances. In one case the temperature remained high for eight days, and the patient complained of severe pains in the limbs. The cause of these accidents was that the serum had not been properly sterilized; after a few days it showed albuminous flakes and cocci.

Emmerich and Scholl reply to Bruns' strictures on the serum treatment, complain that a case in which Bruns reported to them a decided diminution in the growth is omitted; that the serum was sent to him for preliminary trial during a time when its exact method of preparation was not decided on; and that too many cases were treated with too little of the serum. They further state that the serum used in some of these cases had become infected and spoilt after transmission, and they express surprise that it should have been used after it had become flocculent. They have treated cases with much larger doses than Bruns with no unpleasant after-ef-

fects. The alarming symptoms produced were due to the injection of the serum into the vessels of the growth. They advocate equally with Bruns early operation.

Before the Munich Medical Society Angerer maintained that serum had no specific curative action. Emmerich treated five cases in the author's clinic. In the first two cases no histological changes could be found, the injections having been given before operation. In the third case erysipelas came on and threatened the patient's life. Neither the injections nor the erysipelas had any effect on the tumor. In the fourth case (No. 1 in Emmerich's paper), a diminution in the nodules was observed, but the erysipelas which supervened might account for it. The subsequent history showed that after the patient's discharge from the hospital new nodules appeared, and death occurred from cachexia. The subsequent history of the fifth case (No. 2 Emmerich) was also unfavorable. The author emphasises the fact that great caution must be exercisep in drawing conclusions.

Zimmermann reported a case in which a diminution in the tumor took place. An afebrile erysipelas appeared on the fifth day, and lasted two days.

Influence of Habitual Inclination of Pelvis on the Pelvic Canal.

Hirst (*University Medical Magazine*) points out that although the pelvic obliquity on account of its normal variations can generally be neglected in regard to childbirth, the influence of habitual inclination of the pelvis on the development of the pelvic bones and pelvic canal has been neglected. Exaggerated inclination of the pelvis in childhood so that the trunk weight is received by the sacrum increases the forward rotation of that bone, diminishing the antero-posterior diameter of the inlet and the depth of the canal, while excessive action of the rotator muscles of the thigh tends to widen the outlet. On the other hand, if the pelvic inclination is diminished, the top of the sacrum is pushed backward, the antero-posterior diameter of the inlet is increased, as is also the depth of the canal; while pull on the ilio-psoas muscles, separating the iliac bones apart, and by compensatory displacement of the ischia, narrows the transverse diameter of the pelvic outlet.

A New Operation in Internal Hemorrhoids.

Dr. Janes (*Provincial Med. Jour.*) reports a new method for treating internal hemorrhoids by means of a clamp and suture instead of a cautery. After divulsing the sphincters he seizes each hemorrhoid and applies the clamp to its bone, cuts away the pile and approximates the mucous membrane of the stump with catgut sutures as follows: The ligature is threaded with two needles. Beginning at one end of the wound, one needle is made to transfix each side of the mucous membrane; then by means of a double continuous suture the surfaces are united with a cobbler's stitch, and in addition each time the needles are drawn through an overknot is tied. This form of suture is unique, as it prevents any possible bleeding and greatly lessens the risk of the deeper part of wound becoming infected.

Thioform.

Thioform, a chemical combination of bismuth, sulpher and salicylic acid, has been brought foward as a substitute for iodoform. It is a tasteless and odorless powder of a greenish-yellow color. When used as a dressing for ulcers, wounds, burns, etc., thioform has shown itself to be equal, if not superior, to iodoform. However, the specific action of iodoform in tuberculous affections could not be expected from the use of thioform, as the latter does not contain iodine. Finally, thioform has been used internally in doses of fifteen grains. Its action was similar, but superior, to bismuth salicylate.—*Texas Courier Record.*

Alumnol in Dermatology.

Dr. J. Abbott Cantrell (*College and Clinical Record*) says: "Alumnol has proven itself of decided advantage in my service at the Philadelphia Polyclinic, where I have advised its use in a hundred cases. It was found servicable in acute vesicular eczema, erythema intertrigo, chronic eczema, non-syphilitic ulcers, ringworm and impetigo contagiosa. It was used in the form of powder, 1 part to 3 parts of starch, and as an ointment in strength varying from 20 grains to 2 drams to the ounce, and as a solution in the proportion of 2 drams to the ounce of water."

ABSTRACTS.

THE PSYCHOLOGY OF WOMAN.*

In outlining some of the psychological pecularities of woman as revealed by modern anthropological researches, I shall endeavor to confine myself to those points upon which investigators generally agree, simply omitting those still in dispute, or mentioning them only as questioned.

Psychology is no longer studied apart from physiology. We must therefore first notice some of the secondary sexual characteristics of woman in respect to her physical structure. Woman's form is more rounded and graceful, less bony and angular, having relatively more fat and less muscle. As shown by the dynamometer, woman's strength is at the most only about two-thirds that of man, while her height is as sixteen to seventeen and her weight as nine to ten. Owing to the greater inclination of the pelvis, woman is somewhat less erect than man. The head also is carried less upright, and the gait is comparatively unsteady and indirect. The greater length of the first finger as compared with the third is a feminine peculiarity. This relation, seldom found in man, is not uncommon among women. It gives grace to the hand, and would seem to be an instance of higher evolution, not being found among apes or savages. Woman's lung capacity is in proportion to her size much less than man's, and the amount of carbonic acid expired is relatively less. Differences in the blood are well marked and are said to be significant. In woman the blood contains a less number of red corpuscles—about 4,500,000 in a cubic millimeter to 5,000,000 in man. It has a larger percentage of water and a lower specific gravity. As compared with man, therefore, woman is naturally somewhat anæmic. The pulse-beat is from eight to twelve per minute faster than in man.

Statistics show that about one hundred and five boys are born to every one hundred girls in Europe and America. If a count be made of boys and girls or men and women at any age after the first year, the females are found to be in a considerable excess, and this notwithstanding the decimation of women by diseases incidental to the child-bearing stage of their lives. These results, formerly attributed to accidental causes, are now known to be due to the greater natural mortality of males, and this is found to be in harmony with another series of sexual differences, namely, the greater power of woman to resist nearly all diseases. They endure surgical operations better than men, and recover more easily from the effects of wounds. They also grow old less rapidly and live longer. In brief, contrary to popular opinion, woman is more hardy than man, and possesses a larger reserve of vitality. The long-disputed questions about woman's brain are now approaching solution in a few leading points. If we consider the weight of the brain relatively to the height of the body, it appears that woman's brain is smaller; but if, as is more just, we consider the weight of the brain relatively to the weight of the body, it appears that there is nearly perfect equality, the difference, if any, being in favor of woman. Of more significance in its bearing upon woman's mental capacity is the relative size of the different parts of the brain. In the cerebrum itself the frontal region is not, as has been supposed, smaller in woman, but rather larger relatively. The same is true of the occipital lobe. But the parietal lobe is somewhat smaller. It is now believed, however, that a preponderance of the frontal region does not imply intellectual superiority, as was formerly supposed, but that the parietal region is really the more important. As a balance, perhaps, to these female deficiences, we may note that the circulation of the blood seems to be somewhat greater in woman's brain. In respect to her whole physical structure woman is less modified than man and shows less tendency to variation. Women are more alike than men. Concerning the hypothesis of the infantile character of woman, the above summary is significant. We see at

*G. T. W. Patrick in The Popular Science Monthly, June. Condensed for Public Opinion.

once that a large proportion of her physical peculiarities are also infantile traits.

Let us now trace well-marked psychical differences between man and woman. First, as regards the senses, the popular opinion that woman's sensibility is finer than man's does not seem to be verified by experiment. Havelock Ellis, who sums up a large amount of evidence on this head, believes with Galton that women have, on the whole, somewhat less sensibility than men, and that it is their greater affectability or nervous irritability that has given rise to the popular notion of their finer sensibility. The general opinion that women are superior to men in manual dexterity seems to be borne out neither by actual experiment nor by accurate observation of woman's work in the mechanical arts. Havelock Ellis's inquiries concerning woman's skill in laboratories, in the cigar and cigarette trades, in cotton spinning and woolen weaving, etc., led him to the result that with few exceptions the finer and more dexterous work is done by man in fields where both sexes have equal opportunities and practice. In perception, woman is in general decidedly quicker than man. She reads a paragraph or book more quickly, and knowledge of the subject being equal, she grasps more of it. In perception of objects she grasps more quickly a number of wholes or groups, and has a rapid unreasoned perception of relations which has the appearance of intuition. Her perception of details, however, is less accurate than man's, and her rapid reference of things to their proper classes extends only to matters of common human experience. In apperception the subjective factor is larger in woman, and she sees things more from the standpoint of her own experience, wishes, and prejudices. Even more than in man, where feeling is strong, objective perception is blind. Hence women make poorer critics than men, and more rarely are they impartial judges.

For the formation of concepts, especially the more abstract ones, woman's mind is less adapted than man's. She thinks more in terms of the concrete and individual. As Lotze keenly remarks, women excel in arranging things in the order of space, men in the order of time. Men try to bring things under a general rule, without so much regard to the fitness or symmetry of the result. Women care less for general rules, and are inclined to look only to the immediate end in view, aiming to make each thing complete in itself and harmonious with its surroundings. In respect to memory, as far as any general statements can be made, woman is superior. In reasoning of the quick associative kind women are more apt than men, but in slow logical reasoning, whether deductive or inductive, they are markedly deficient. They lack logical feeling, and are less disturbed by inconsistency. Analysis is relatively distasteful to them, and they less readily comprehend the relation of the part to the whole. They are thus less adapted to the plodding, analytical work of science, discovery, or invention. Their interest lies rather with the finished product. In general, woman's thought is less methodical and less deep. The arts, sciences, and philosophy owe their progress more to man than to woman.

What woman loses in profundity she gains in quickness. She excels in tact, and extricates herself from a difficulty with astonishing adroitness. In language she is more apt than man. Experience in coeducational institutions shows that women are more faithful and punctilious than men, and at least equally apt. In many kinds of routine work, especially that requiring patience, women are superior, but they are less able to endure protracted overwork. We have seen that woman is less modified physically than man and varies less from the average. The same is true mentally. Women are more alike than men and more normal, as it were. Woman loves the old, the tried, and the customary. She is conservative, and acts as society's balance-wheel. Man represents variation. He reforms, explores, thinks out a new way. One of the most marked differences between man and woman is the greater excitability of the nerve centers in the latter. Woman possesses in a higher degree than man the fundamental property of all nervous tissue, irritability, or response to any stimulus. That woman is more emotional than man is only another way of stating the same fact. Sympathy, pity, and charity are stronger in woman, and she is more prominent in works that spring from these sentiments, such as philanthropy and humane and charitable movements. Woman is more generous than man.

In morals a few distinctions between

the sexes are well determined. Male criminals outnumber female criminals about six to one. Some forms of crime, indeed, are much more common among women. When women do become criminals, their crimes are often marked by greater heinousness, cruelty, and depravity. Woman's appetites are not so strong and her passions are less intense. She is freer from intemperance and related forms of vice. The most marked moral superiority of woman appears in her altruism; her greatest moral defect in her untruthfulness. In her altruistic life of love and self-sacrifice woman shows herself the leader in the supreme virtue of Christian civilization. As far as she leads in this, so far does she fall behind in veracity. She has not the same conception of abstract truth as man, but thinks more of the good to be attained. Deception and ruse in woman, far more than in man, have become a habit of thought and speech. A series of conditions, social, intellectual, and physiological, have forced this habit upon her as a means of self-defense. Woman's religious nature is stronger than man's. She possesses in a marked degree the qualities of reverence, dependence, devotion, trust, and fidelity. Fear and timidity are feminine qualities, while faith is so natural to woman that she is disposed to credulity rather than to skepticism. From her mental differences the doctrine of woman's inferiority receives no support. But here again, as in her physical peculiarities, woman approaches the child type.

The hypothesis that woman approximates to the primitive rather than to the child type, that she represents arrested development, may be said to receive a certain amount of confirmation from her mental traits. That women are less modified mentally and aremore a like than men also argues for arrested development. But in many of her mental traits woman departs further than man from the savage type. In her moral qualities she represents higher evolution. This is notably true in respect to her altruism, charity, sympathy, and pity. It has been shown by Geddes and Thomson, Fouillée, and others, that in many of the lower and simpler orders of animals the female is larger than the male. This is true, with exceptions, throughout the animal world as high as the amphibian, and is in close logical connection with certain other important differences between the sexes. These, observed also best among the lower orders, are as follows: The male is active, restless, agile. The female is passive and quiescent. She has lower temperature, greater longevity, and a larger fund of vitality; her birth is the accompaniment of conditions of better nourishment. The male is katabolic, representing the expenditure of energy, individualism, variation, and progress. The female is anabolic, representing economy and the building up, conserving, and reproductive functions. She is nearer to and more representative of the race.

Again, if it should be shown that woman conspicuously resembles the infant in body and mind, very unwarranted inferences might be drawn from this. It is true that the infant of the human species has certain curious points of resemblance to the lower animals, notably the ape, but it is equally true that the infant ape has certain marked resemblance to the human species which the adult ape does not have. By analogy we may infer that the human infant has closer resemblance to the more highly developed being of the future than the human adult has, and if woman is more like the child than man is, then she is more representative of the future being. The matter, in fact, reduces itself probably to this: that woman, like the child, represents the race type, while man represents those variable qualities by which mankind adapts itself to its surroundings. If superiority consists in adaption to present environment, then man is superior; if it consists in the possession of those underlying qualities which are essential to the race—past, present, and future—then woman is superior. Woman's more intimate connection with the life history of the race, her childlike, representative, and typical nature, her embodiment of the everlasting essentials of humanity, her at present arrested or retarded development—all these are indicated by modern anthropological studies. These results are indicated, not proved. They must be verified, supplemented, and no doubt, in some instances, corrected by future studies along these lines.

Cicero had a voice so pleasant that whenever it was known he was to speak, though only in an ordinary law case, the court immediately filled with people.

SOCIETY REPORTS.

OHIO STATE MEDICAL SOCIETY.

1895.

CONTINUED REPORT ON TYPHOID FEVER

was presented by John Eliot Woodbridge, M.D., Youngstown, O.

The paper was a supplementary report of cases of typhoid fever successfully treated with the following recipe administered in No. 5 capsules:

Calomel	℈ i
Guaiacol carb	℈ vi
Thymol	℈ v
Menthol	℈ i
Sacch. alb	℈ ii

Eucalyptol, as much as a pharmacist can get into the tablet.

(Sometimes a minute quantity of podophyllin is added.)

By this treatment the essayist claimed to be able to abort typhoid fever in cases that were seen early, before the appearance of the rose colored spots, and that in such cases the mortality is absolutely *nil*. His statistics now cover about 800 cases with nine deaths. He believes, with this therapy there is no need of restriction of diet, or the enjoining of rest.

DISCUSSION.

Dr. E. W. Mitchell, Cincinnati: Remembering how frequently we have been disappointed in special treatment of diseases of this kind, Dr. Woodbridge cannot wonder that this society met his first reports with the utmost incredulity, and we have demanded of him the proofs. The figures he here presents demand our most careful consideration. Allowing for mistakes in diagnosis, a record of 800 cases with nine deaths, a mortality of a little over one per cent., should appeal to us in the spirit of inquiry and trial. Too great skepticism is not more worthy of science than is too great credulity.

Intestinal antisepsis we believe is of value in the treatment of typhoid fever. It seems to me, and I believe I am in accord with many of the leading authors of this and other countries, we have assigned rather a secondary place to the use of antiseptics in the treatment of typhoid fever. I believe if Dr. Woodbridge had not struck from under us the very foundations upon which we had been accustomed to rely so may years, namely, rest and a liquid diet, we should have listened more readily to his statements. It seems, certainly, peculiar that we can disregard those things which pathology and experience have taught us in the past are of the utmost importance. For one, I am willing to say I am so far convinced by the report of Dr. Woodbridge, that I shall give this treatment a fair and impartial trial. We owe this to a member who comes before this society with a report so startling as his; we owe it to our patients; we owe it to ourselves. At the same time, I shall not give up the rest and liquid diet, and when required some of the applications of antipyresis. I hope the members of the society will try this treatment, so that when we assemble next year we shall be able to bring from a large number of men, from various sections of the country, treating various classes of people, in private and hospital practice (and the latter we know is the severest test), sufficient data to enable us to arrive at a correct idea as to the value of this treatment.

The mortality of typhoid fever in private practice under the prevailing methods of treatment is small. The mortality in hospitals, where we have the worst class of cases to treat, has been very greatly reduced of late years. Intestinal antisepsis has, no doubt, been one of the factors of this reduction. But much is due to rest, liquid diet, hydrotherapeutics, and other therapeutic measures. Some years ago, Dr. William Pepper reported a series of a hundred cases without a death treated by nitrate of silver. Still later on, he reported that in an experience of many years he had not lost any patients treated by this drug, who had come early

under treatment. Dr. Waugh has reported a hundred or more cases treated with the sulpho-carbolate of zinc. Thus we have various drugs reported by various men to give the best of results. So it seems to me we should consider this a portion of treatment, and I beleive when this mode comes to be applied generally and by different men, we shall find we still have use for those other means of treatment we have found of value.

The time is too short for me to touch at length upon the treatment of typhoid fever. These statistics compare very favorably with the cases Brandt reported from the use of the cold bath. We cannot in any disease rely infallibly and invariably upon any one known remedy. So, while I wish to acknowledge my conviction that Dr. Woodbridge has presented a most valuable means of treatment, I still believe we shall find use for other remedies.

One word I would like to say in regard to the Brandt treatment. Those of you who have tried it will recognize how invaluable it is in certain cases. No doubt we have all found it extremely difficult to apply in private practice, and especially in the country. Accidents will happen with it. Quite recently, in my service at the Cincinnati Hospital, I ordered the cold baths for a young girl who had just come in with typhoid fever. She resisted the baths and struggled violently. In the third bath she went into collapse after a struggle, and was with difficulty rallied. So this treatment must have its limitations.

Dr. Woodbridge's formula, if I remember correctly, contains calomel, guaiacol, thymol, menthol, eucalyptol, etc., many of which are volatile substances which are readily absorbed and which are carried by the blood in comparatively large proportions without producing damage to the blood or tissues. Perhaps we have in this fact the reason the combination gives better results than any single remedy we have used. Calomel has been recognized for a long time as one of the most valuable of our remedies. Guaiacol is readily absorbed and carried through the tissues, where it may produce its antiseptic effects. Thymol was used and warmly recommended as long ago as 1882 or 1883. It is recommended by Henry, in his "System of Therapeutics."

Dr. Geo. A. Packler, Cincinnati: It was really by my request the President asks me now to present to you a report of cases in which guaiacol was used externally for the purpose of producing an antiseptic effect. I have here a number of charts, which will be evidence in connection with what I may say. They were arranged by the nurses in the Cincinnati Hospital, and show the changes that occurred during the use of guaiacol. In order to bring this in touch with the subject under consideration, I would show two charts of cases of typhoid fever in which guaiacol was used. It is not necessary for me to go into this subject in detail, only that after reading the favorable reports from the other side of the water of experiments made by various men, I was induced to give this method of treatment a trial in the hospital, about the time Dr. Eichberg was trying the warm bath treatment, referred to this morning. The treatment consists in washing some portion of the body thoroughly, and painting into the skin some 20 to 25 drops of guaiacol. Two or three hours after the application the temperature reaches its lowest level. It begins to subside almost as soon as the first drop comes in contact with the skin. It has been shown that within a quarter of an hour after the administration of guaiacol, it is eliminated from the body. According to all observers, this remedy has proven to be a very efficacious antipyretic. In the majority of cases it can be employed, if judiciously applied, without any fear of disasterous results. In fact, although used now for over two years, no death has been reported from its use. Now and then we hear statements that we should be extremely cautious, and that the use of guaiacol applied in this manner is dangerous, because in a case in which the physician in attendance applied a very large amount collapse ensued. But such collapse has never been fatal. It is with this as with any other remedy expected to produce decided results. We must eliminate cases where we expect collapse. If we begin with the application of 10 drops, we can regulate the dose thereafter so we will not have any disasterous results.

The action of guaiacol is most positive. It was used in a variety of cases in my service during four months—altogether 30 cases of tuberculosis, pneumonia, tubercular peritonitis, and in some cases of

influenza as well as of typhoid fever. Of all these cases, there were two in which the guaiacol had absolutely no antipyretic effect. These were cases of facial erysipelas. In both cases the temperature rose after the application of guaiacol, in one case to 105° F. and the patient being on the verge of delirium, we were forced to administer another antipyretic.

Guaiacol, if introduced into the skin in this manner, is rapidly absorbed and produces no deleterious effects on the skin. No evil influence has as yet been exerted upon any internal organ, not even on the kidney through which a large amount of the guaiacol is eliminated. We have a remedy here with which we can avoid all the disagreeable symptoms which accompany so often the administration of other antipyretics, and even use the cold bath in properly selected cases. As Dr. Mitchell has told you, from the cold bath in some cases we will have bad results. And if we have a remedy, such as guaiacol promises to be, why not give it a fair trial? It is for this reason I bring the charts before you. It is not my desire to bring before you any treatment which will cure every case of typhoid fever. I did not hear the gentleman's additional report of cases, but I do not believe there is any specific cure for typhoid fever. That has been claimed. But these kings who have claimed that, have crowned themselves; they have been sitting on tottering thrones, and those thrones have tumbled to the dust.

DR. WOODBRIDGE: I merely want to correct an impression that may get out, that the reduction of temperature in typhoid fever is to be desired. I do not believe it. I do not believe the temperature in typhoid fever is indicative of danger, except as it is indicative of the absorption of ptomaines and no further.

The gentlemen who last discussed the subject, of course does not speak from knowledge. He speaks like William Osler, or I. N. Love, of St. Louis; he speaks like a great many others do—with no knowledge whatever of the subject. When I read my paper before the Section on Practice, of the American Medical Association, Professor Quin, from Chicago, said, "the honesty of these men, strangers to Dr. Woodbridge, cannot be questioned." Although he said to his students, "if any man says he can shorten the course of typhoid fever, he don't know what he says," when he heard my paper, he said he felt wholly incapacitated for discussing it, and if he did not give his patients the advantage of the treatment he would be remiscent to them.

If any gentlemen will show how any of these remedies produces the effect I will accept his knowledge, but I know typhoid fever can invariably be aborted in the early stages of the disease. Death can invariably be averted if the patient consults the physician at the outset of the disease and the physician institutes positive treatment before waiting to make a positive diagnosis. After the rose-spots appear, it is too late to abort the disease.

PHILADELPHIA ACADEMY OF SURGERY.

June 3, 1895.

Dr. A. Hewson exhibited:

I. A DIVIDED SPRING FOR HEAVY BONE-CUTTING FORCEPS.

The forceps which I now present to the Academy have been used in laminectomies with very great success. In the four laminectomies in which this instrument has been used, the ease with which the spinous processes and the laminæ have been cut was remarkable. The forceps are of the general style of the costatome, and, in addition to the purpose already mentioned, they are useful for cutting off plaster bandages. The blades are set at an obtuse angle to the handles so as to facilitate cutting the laminæ. The upper cutting blade is serrated like the teeth of a saw. The lower, which is also a cutting blade, has at its extremity a horizontal

projection, similar to that on the bandage shears, which is to be inserted beneath the laminæ and serves to keep the blade in position while cutting the bone. The handles are much longer, to give greater leverage. The new point to which I wish to direct your attention is the divided spring. All the other instruments of this kind are provided with a single spring, which keeps the blades apart. In this instrument the spring is divided so that it can be turned back when not in use, and when extended we get the full power of the spring to open the blades. I have found this a very useful appliance, and have used it both in the living and in the dead body. It greatly facilitates opening the spinal column for removing the cord, and for this purpose is much better than the spinal saw.

II. PORTABLE LIGATURE TUBE-HOLDER.

This holder resembles a gigantic test-tube holder, made of sheet iron, painted white. It consists of two uprights and three shelves. The uprights are $9\frac{1}{4} \times 4\frac{5}{16}$ inches, having three hollow blocks, $2\frac{1}{8} \times \frac{3}{8}$ inches, placed on the inside at the base $2\frac{1}{4}$ and $8\frac{1}{4}$ inches therefrom, leaving one inch above the top shelf. The three shelves are $13\frac{5}{16} \times 14\frac{5}{16}$ inches. The first, or upper shelf, has five holes for the ligature-tube, $1\frac{1}{2}$ inches in diameter. The second, or middle shelf, has the same number of holes, $1\frac{1}{4}$ inches in diameter. The third, or bottom, is without holes. The difference in diameter of these holes adds equilibrium to the tubes when in place. On the under surface of each shelf at their extremities is a block (size already given in the uprights), with a projection which fits into the hollow block of the uprights. These blocks are opposite to those on the uprights, so that the projections may be pushed in when the holder is ready for use. The space occupied by the whole when apart is $13\frac{5}{16} \times 4\frac{5}{16} \times 1\frac{1}{2}$ inches, and weighs in its present crude form eight pounds.

When in use the corks of the tubes are removed and placed in a proper antiseptic solution and the orifice of each tube covered with bichloride-gauze. The assistant removes the ligature as required with a pair of forceps, so that it is fresh from the solution to the hand of the operator without handling. This mode of procedure has been in operation at the Jefferson College Hospital for two years past and has given great satisfaction. The original thought of this mode of handling ligatures was brought about by having each ligature in a separate tube, but this was found to be a cause of infection, as it was impossible to insure the aseptic condition of a fine glass tube for each ligature, as well as consuming too much time in the preparation of such tubes.

III. SET OF ANATOMICAL INSTRUMENTS.

This set of anatomical instruments is of interest from a historical point of view, as it contains a syringe for fine injection of lymphatic vessels, used by my ancestor, William Hewson, F.R.S., in 1768, in his preparations. This brass syringe, you will observe, is in a perfect state of preservation, with four gold-pointed nozzles. I have used it in preparing fine injections of the lymphatics, as in that exhibited to the Academy about a year ago. The large brass syringe was used by my father (deceased) in his preparations during his student days, and by means of which, with the various attachments you now see, he prepared subjects for fine dissection. The sternum dilator gives the greatest width possible for aortic injection (6 x 8 inches). In making tallow and soap injections I have found that veins injected from the heart will hold one-quarter more material than the arteries injected by the aorta, and still some of the cutaneous veins of the extremities will not be filled owing to their finer valves. In introducing the preservative fluid I use altogether the hydrostatic method, the subjects taking from three to five gallons of fluid. The saw, you will observe, is the ordinary fine carpenter's pattern, with an upright handle about three inches from its extremity on the upper margin. The cutting edge has been lunated anteriorly, while the posterior or handle extremity is at right angles. This is a modification of the Forbes' saw, the cutting edge of which is lunated. The object attained by the modification is that it enables it to be used in sawing either the cranial bones or the laminæ, which is not the case with the entire lunated margin. The forceps just described is superior to the saw for the laminæ, giving greater space and more rapidity of action, besides avoiding all risk of injury to the spinal nerves. The case contains, in addition to the above,

spaces for two balls of twine (large and small), Hey's saw, enterotome, brain-knife, blowpipe, hammer, chisel, large incision knife, student's dissecting case with its accompaniments, and stopcock pipes of various sizes for immediate introduction into the vessels.

Dr. C. W. Dulles read a paper on

FRACTURE OF THE SKULL.

(See page 132.)

DISCUSSION.

DR. T. G. MORTON: Has the alteration in the conformation of the skull, I mean the shortening of the axis in the direction of the applied force and the lengthening of the transverse axes, been accurately determined by measurement?

DR. DULLES: Yes; the alteration has been carefully measured and there is an appreciable difference, the amount of which is mentioned in my former paper.

DR. HEWSON: In connection with the remarks upon the fractures of the clinoid processes, have you taken into consideration the fact of the difference in the height of the free concave margin and anterior attached extremities to the posterior clinoid processes? Owing to this, the portion of the tentorium open for the passage of the nervous substance is triangular, with curved sides, and thus much higher than its attached anterior extremities to the posterior clinoid processes. The direction of the free margin of the tentorium is pointed upward over the superior vermiform process of the cerebellum, this margin being higher than its anterior attachment. I only wish to know if the direction of the traction upon the posterior clinoid processes contribute anything to the fracture? The point I wish to ask is, have you observed any laceration of the margins of this opening?

DR. DULLES: Whether or not the posterior clinoid processes are higher than the arch of the tentorium depends much on the way in which the skull is held. I should think that under ordinary circumstances, when the head is held erect, they are about on the same level.

DR. HEWSON: The tentorium arches upward.

DR. DULLES: I have not overlooked this fact in my study of fractures of the skull. Under ordinary circumstances the curve of the tentorium would supply an amount of slack material which would prevent any pull on the clinoid processes. But it must be remembered that the tentorium rests upon the cerebellum and is held tense by the cerebrum above the cerebellum, and is so attached that the latter occupies a closed, unyielding case. The brain-substance is so largely made up of water that it is almost as incompressible as water [which is practically entirely incompressible] and the cerebellum will hold up the tentorium almost as effectually as if it were made of marble, and so cause a pull at its posterior part to be transmitted to its anterior attachments. This I say only by way of a suggested explanation of fractures of the clinoid processes; I have no demonstration of the theory to offer.

Method in Diphtheria.

F. Kastorsky (*Brit. Med. Jour.*) reports thirty-seven cases of diphtheria (in three adults and thirty-four children) treated and cured by painting with a ten per cent. alcoholic solution of menthol. The paintings (by means of a piece of cotton wool) were usually carried out three times daily. In some cases, however, a single free application was followed by complete disappearance of false membranes within two days. A marked improvement in the patient's general condition was invariably noticed from the beginning of the treatment. The same simple method was successfuly practiced by the author in numerous cases of angimas of various forms, and by Trütovsky in a group of cases of scarlatinal diphtheria.

A New Method of Disinfecting the Mouth and Throat.

Experimenting with colored fluids, the author found that only the soft palate and tongue came in contact with the solution used, and consequently they are without value. He recommends the use of bonbons made from saccharine and resin guaiaci, and claims that in their use the entire mucous membrane of the mouth and throat is brought into contact with the disinfectant used. Their value is proven in that the bacteriological examination of the secretion of the mouth shows it to be free from bacteria after the use of the bonbons, when they had been present before.—*Szanas in Archiv. fur Kinderheikunde. Arch of Pediatrics.*

CURRENT LITERATURE REVIEWED.

IN CHARGE OF ELLISTON J. MORRIS, M.D., AND SAMUEL M. WILSON, M.D.

THE AMERICAN JOURNAL OF OBSTETRICS.

for June. J. Clifton Edgar, M.D., of New York, contributes an interesting article on

Deep Incision of the Parturient Cervix for Rapid Delivery,

reporting three cases in which the operation was performed for eclampsia complicating delivery. The result was the saving of four children (one case of twins) and two out of the three women. Cuts and photographs are given in the article showing, in case 1 the condition of the genital organs one year after the operation, in case 2 the genital tract itself with the results of the autopsy, and in case 3 the condition of the genital organs two months after the operation and delivery. In the three cases described the situation was desperate in the extreme, and in view of this fact a procedure was made use of in each which seemed to offer the best, if not the only hope of recovery.

The author insists that the operation should only be performed when the entire supra-vaginal portion of the cervix is dilated—in other words when the defective dilatation is confined to the vaginal portion of the cervix. When, during pregnancy or labor, the supra-vaginal portion of the cervix has disappeared (being drawn up into the body of the uterus), or can be made to disappear by appropriate mechanical means, and grave danger threatens mother or child, complete dilatation can be secured in a few minutes by means of from two to six deep incisions radiating from the os to the utero-vaginal junction, and the uterus emptied in a few minutes by appropriate means. Care must be taken not to open the pouch of Douglas and the author also states that it is not necessary to or advisable to suture the incisions after the operation. Spontaneous union of the cervical incisions usually occurs. Immediately after delivery of the placenta an intra-uterine douche is given and the cavity of the uterus packed with iodoform gauze for the purpose of thorough drainage. It has been shown by those who have practiced the operation that the procedure is not associated with considerable hemorrhage and on this account the incisions need not be sutured subsequently.

The author believes that the field for the operation is limited; that the operation itself is a serious one and not lightly to be undertaken.

Charles P. Noble. M.D., Surgeon-in-Chief, Kensington Hospital for Women, Philadelphia, Pa., writes on

Celiotomy for Puerperal Septicemia and for Puerperal Inflammatory Conditions.

He says, "The present status of the subject of celitomy for puerperal septicemia and for puerperal inflammatory conditions may be summed up as follows:

Cases may be divided into two classes:

(a) Those having morbid conditions in the pelvis antedating labor, such as tumors, pus tubes, or other septic accumulations, the bruising or rupture of which during labor leads to peritonitis or septicemia. Prompt operation in these cases has given good results.

(b) Those having normal pelvic structures at the onset of labor. The infectious process may spread through the lymphatics to the peritoneum and give rise to peritonitis, cellulitis, and septicemia. It may spread by way of the Fallopian tubes to the peritoneum, setting up peritonitis. Or it may be limited to the utero-vaginal canal. Celiotomy is not indicated in lymphatic peritonitis, as the morbid process is too widespread to be reached by operation. Celiotomy has been followed by a fatal result in cases of general puerperal peritonitis. The only ground for advising operation with such a diagnosis is the possibility that this may be erroneous. The prognosis is best when celiotomy is done for localized peritonitis, when the process has become well circumscribed and the element of sepsis is eliminated; in other words, when the case has resolved itself into one of pyosalpinx, abscess of the ovary, or of pelvis abscess of puerperal origin. The prognosis is good when cases of localized peritonitis are operated upon promptly, that is, within two or three days of the beginning of the attack, or at about the end of the first week of the puerperium. Cases which have gone from bad to worse, and in which the operation is done as a last resort, usually terminate fatally. Hysterectomy is indicated for those cases in which the infection is limited to the utero-vaginal canal, when, in spite of thorough curettement of the uterus, together with copious irrigation of the utero-vaginal canal and the employment of proper systemic treatment, the infectious process increases in severity.

In dealing with the results of puerperal septicemia by operation, celiotomy affords the opportunity for satisfactory diagnosis and adequate treatment. The organs involved may be palpated or inspected, and when necessary the operation may be followed by irrigation and satisfactory drainage. The vaginal route for operation is indicated for large pus accumulations which are found late in the puerperium."

Francis Foerster, M.D., Professor of Diseases of Women to the New York Post Graduate Medical School and Hospital, etc., concludes his series of papers entitled

"Comparative Studies Microscopical Studies of the Ovary."

this article concerning the Developement of the Graafian Follicle after birth. Summing up his researches he condenses them in the following:

"The cortex of the ovary of the higher vertebrates is at the time of birth crowded with primordial ova consisting of nothing else but the vesicula and macula germinative and around the vesicula a thin layer of flat epithelia. The same I found to be the case in the ovary of a girl of 5 years old. Among the primordial ova we find small clusters of epithelia, comparatively numerous in the cat and scanty in the human ovary. These clusters I would consider as the direct product of Pflugers ducts and as the ante-stage of the primordial ova. Hence, in contradistinction to the majority of histologists, I consider the primordial ovum as the product of numerous epithelia fused together, and not as the product of single epithelium. Evidently the result of the fusion of the epithelia is an indifferent mass of protoplasm in which a differentiation into the ovum with the vesicula germinativa and a lining layer of flat epithelia takes place. The lining epithelia do not themselves grow up into cuboidal and columnar forms, but a fusion of such epithelia takes place with the result of the appearance of multinuclear protoplasmic masses. These protoplasmic bodies split up into new and perfect epithelia, cement substance intervening between the single epithelia. The living mattter of the epithelia remains interconnected by the delicate thorns traversing the cement substance. Furthermore, from either the cuboidal or columnar epithelia lining the follicle and the ovum an outgrowth of indifferent protoplasm takes place with the final result of a production of multiple layers of cuboidal epithelia. By the liqufaction of a number of cuboidal epithelia, spaces arise filled with the albuminous liquor folliculi; remaining epithelial tracts keep the ovum in situ. The so-called structureless membrane ensheathing the follicle is not a constant formation, it is not structureless, but is derived from an infiltration of a layer of emdothelia subjacent to the outer row of columnar epithelia of the follicle with an extremely dense, so-called elastic basis substance."

Robert G LeConte, M.D., Surgeon to the Methodist Episcopal Hospital, Philadelphia, etc., contributes a paper entitled

An Operation for the Restoration of the Sphincter Ani.

The author describes the operation as follows: "The surface to form the new perineum is freshened and denuded in the usual manner. The stitches to sew up the laceration in the rectum are passed from below upward, so that when tied the knots will come in the lumen of the gut. The sphincter is now well stretched until the mucous membrane at the margin of the anus breaks into little fissures. The sphincter having been stretched, the two ends are hooked from their dimple-like depression with a tenaculum and pulled into view. To be certain that the muscle is caught the sphincter is grasped below, and when traction is made with the tenaculum the muscle will be felt to move beneath the fingers. The ends of the muscle are freshened either by cutting off a small portion with the scissors or by fraying the ends well with the point of a knife. Two medium-sized catgut sutures are passed through the side of the muscle opposite to each other and tied, and the ends left long. Two similar stitches are passed on the other end of the sphincter, and the muscle is brought together by tying the long end of the sutures at one end to those of the opposite end." The rest of the operation is completed in the usual way.

Influenza Complicating the Puerperium.

is the title of a paper by R. Abrahams, M.D., Attending Physician to Mount Sinai Hospital Dispensary, New York. The paper is based on the study of sixteen cases. The following points enabled the reporter to arrive at a correct diagnosis in every instance:

The uterus in every case was normally contracted and of normal size; no tenderness or pain over it or its appendages, either by abdominal palpation or vagina examination. The lochia which in the very severe cases was somewhat suppressed, yet in all were of the normal color and odor; the os was not patulous, and tympanites was absent.

The author made it a rule to examine every patient for some hidden source of infection, and in every case the result was negative.

The prognosis is good; the disease lasted from four to eight days. In the treatment the author relied on good nourishment and stimulents when indicated. The ice-bag, the curette, the intra-uterine douche were conspicuous by their absence.

The other papers in this issue are:

Ligature and Suture Material in Hysterectomy. By J. M. Baldy, M.D., of Philadelphia. The author evidently prefers catgut for ligatures.

Deformed Coccyx Causing Dystocia and Death of Child. Report of two cases. By Ervin Alden Tucker, M.D., Resident Physician of the Sloan Maternity Hospital, New York.

Suspension of the Retrodisplaced Uterus by the Utero-ovarian Ligaments. With a report of seventeen cases. By Reuben Peterson, M.D., Grand Rapids, Mich.

Report of a case of Postmature Labor. By Frank A. Stahl, M.D., Demonstrator of Obstetrics, Rush Medical College, Chicago. The author perfers the term "Postmature Labor" to missed labor—the one usually employed.

Papilloma and Papillomatous Cysts of the Ovary. By George C. Freehorn, M.D., Instructor in Normal Histology in Columbia College, New York.

Clinical Notes. By Barton Cooke Hirst, M.D., Philadelphia. In this paper is given the report of a most interesting case of perineal injury during labor with photographs of the condition of the vaginal outlet before and after operation.

THE ANNALS OF GYNÆCOLOGY AND PÆDIATRY.

for May. Dr. Augustin H. Goelet of New York contributes a paper on

Ectopic Pregnancy.

The author advocates the use of electricity in this disaster rather than abdomina section.

He states that when rupture occurs between the folds of the broad ligament immediate operative interference is not demanded or indicated, as it is comparatively harmless and may be left to nature, or absorption may be promoted by the use of electricity if the growth of the fœtus has been arrested at a sufficiently early period. Even where intraperitoneal rupture occurs, the records of cœliotomy show that hæmorrhage is often found to be moderate in amount and not in itself sufficient to furnish occasion for immediate surgical interference. The patient should be closely watched and if the hæmorrhage is uncontrollable, cœliotomy should be resorted to without delay. The electrical treatment is urged by the author before rupture. The author further states that "No deaths have occurred which could be attributed to the use of electricity in ectopic gestation, and no evil results have followed. On the contrary the health of the patients has been good from one to eight years afterwards. The fatal cases, four in number, have been shown to be due to other causes and in no way attributable to electricity." He more than hints that such a record cannot be shown by the advocates of abdominal surgery, and concludes that the use of electricity in unruptured tubal pregnancy, prior to three or three and a half months, is the most rational proceeding that we can adopt.

E. W. Cushing, M. D., of Boston contributes a short paper on

Hysterectomy for Cancer.

In this paper, which was read before the American Association of Obstetricians and Gynæcologists at Toronto, 1894, the author states that he prefers the ligature to the clamp in these operations and the vaginal route to the abdominal on account of the less amount of shock by the vaginal method.

In discussing the paper, Dr. J. D. Griffith, of Kansas City, referring to a fatal case reported by Dr. Cushing where the operation had been done by the abdominal method, asked Dr. Cushing if the woman had been operated on in the Trendelenberg posture. On Dr. Cushing replying that she was, Dr. Griffith went on as follows: "The reason I spoke of the Trendelenberg position was this: I have recently lost two cases in abdominal and pelvic work that I thought could not have died from anything else than from it. In a series of twenty-four consecutive cases I have lost these two. They were not as desperate to deal with as some I have had dealt with without the Trendelenberg position. I put myself in the Trendelenberg position for thirty minutes, and if any of you will try it for a short time, even without the assistance of the anæsthetic, you will find that it produces marked shock. I have found by experience that the Trendelenberg position is as exceedingly disagreeable one, and one that is not easily recovered from. I did not fully recover from it in less than two and one-half hours."

I. S. Stone M.D., of Washington D.C. discusses "Stitch Abscess" and states that he has never seen better results than can be obtained by asepsis rather than so-called chemical antisepsis. Strict cleanliness is necessary in protecting the wound.

The remaining papers in this issue are:

Benign Tumors of the Breast. By Charles Greene Cumston, B. M. S, M.D.

Injuries to the Pelvic Floor. By F. B. Dorsey, M.D.

In the Department of Pædiatry there is a paper by Harold Williams M.D. entitled "Wherein Popular Education Has Failed.

PERISCOPE.

IN CHARGE OF WM. E. PARKE, A.M., M.D.

SURGERY.

Treatment of Tuberculosis of the Joints.

Professor Rydygier, of Krakow (*Przeglad Lekarski*, No. 15, 1895), read a paper on this subject at the Seventh Congress of Polish Physicans in Lemberg, his conclusions being as follows: 1. That conservative treatment should not be looked upon as a competitor of operative treatment; on the contrary one should be complement of the other. 2. The treatment chosen in a given case should depend on the social position of the patient, his age, general state of health, local changes, and on the joint affected. 3. If there is a distinct suppuration of the joint, with inclination to spread and destroy the joint, it is necessary to operate. 4. The better the method of conservative treatment, the more we can limit the operation. 5. The best method of conservative treatment is that which permits the patient to profit by fresh air and movement such as will not expose the joint to irritation. 6. The best method of conservative treatment is that which best permits of the removal of the morbidly degenerated parts without any special regard to later action of the joint; in some cases, however, the complete removal of the joint is advisable. 7. Operations performed too late increase the statistics of conservative treatment, but are not advantageous to the patients, while too early operations only injure unnecessarily. 8. In addition to local treatment, sea-air and suitable baths are recommended as general treatment. *B. M. J.*

Surgical Treatment of Hydatid Tumors.

Rudall (*Australian Med. Journ.*,) says that much of the success which has been obtained in the surgical treatment of hydatid tumors is due to the thoroughness of evacuation and to the employment of the shortest route to the surface of the body in carrying out the evacuation. He relates the following case as illustrative of these remarks. A male patient, aged 28, suffered from a swelling in the right side of the chest, which extended upwards as far as the top of the fourth interspace. On aspiration with a fine trocar fluid was withdrawn which contained pus cells and hooklets. There were no symptoms of lung affection. The diagnosis was thought to be a hydatid tumor of the liver, which had encroached to a very considerable extent upon the thoracic cavity. There did not seem to be any likelihood of dealing with the tumor effectually by an abdominal incision, and on this account it was decided to reach it through the chest wall. After the patient had been anæsthetised an incision was made from near the right nipple downwards and outwards across the ribs, and then about 2 inches of the sixth and seventh ribs were resected. The pleura was then opened, and the lung was found to have been pushed upwards towards the apex of the chest cavity. The liver containing the tumor, and covered by the diaphragm, occupied the greater part of the chest. The diaphragmatic and costal surfaces of the pleura were sewn together with sutures of silkworm gut, and then a fine trocar was passed inwards in several directions. At first watery fluid escaped, and then it became opaque. On this account it was thought that more than one tumor existed. The diaphragm was next cut through and a large hydatid cyst opened. This contained opaque fluid and daughter cysts, some of which were filled with clear fluid. The liver substance over-lying the cyst was broken down with the finger so as to allow the escape of the contents of the cyst, and also the cyst itself, which was drawn out apparently entire. The liver tissue around the opening was stitched to the margins of the wound in the diaphragm, so as to shut off the peritoneum from the field of operation. The cavity in the liver was washed out with a weak sublimate lotion and a glass drainage tube introduced. A week after the operation there was a little bleeding from the wound, which lasted for several days, when a small piece of cyst wall was washed out. After this the wound healed. A little later two swellings formed in the right hypochondriac region, which were treated in the same way and the patient recovered completely.

Treatment of Fractured Femur by Suture.

Walther (*Rev. de Chir.*) has recently communicated to the Societe de Chirurgie of Paris the case of a man who in falling from a wagon received a severe injury to the knee. The lower end of the femur was broken into three fragments, and the tibia was displaced backwards. The internal condyle remained attached to the tibia, and had been carried backwards with the head of this bone. Walther, finding that the reduction and coaptation of the fragments of the femur would be attended with much difficulty, opened the knee by a long incision on the antero-internal aspect of the joint, placed the osseous fragments in contact and in their normal relations, and fixed them together by sutures. The patient made a good recovery. Twelve months after the operation the knee was still slightly swollen, and the injured limb a little shorter than the other, but the patella was movable, and the leg could be freely flexed and extended by the patient, who was able to walk without any difficulty, and to follow his occupation of floor-making. The result, the author holds, is certainly far superior to what would have been obtained by practicing the ordinary treatment of fracture.

NEWS AND MISCELLANY.

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